University of Alberta

The Role of Social Support in Mediating the Stress of School Transitions

by

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Abstract

The purpose of the present study was to determine whether students perceived differences in the types or amounts of support they received from parents, friends, and teachers and whether different types of support mediated school transition adjustment in different domains (i.e., social, emotional, academic). Students (N = 95) completed questionnaires in April (sixth grade), September and December or January of seventh grade. The questionnaires included measures of four types of support (emotional, informational, instrumental, social companionship), state anxiety, self-worth, loneliness, stress and daily hassles. As well, attendance and academic grades were obtained for the last term of sixth grade and the first term of seventh grade.

Students perceived parents as providing the most emotional and instrumental support and friends provided social companionship support. However, friends and parents did not differ significantly on these types of support at all test sessions. Teachers were rated as providing more emotional and informational support than any other type of support. Informational and emotional support from friends were the best predictors of social adjustment following the transition to grade seven. Informational support from parents and friends best predicted self-worth. Informational support from teachers and friends and instrumental support from friends predicted state anxiety in seventh grade. Support did not predict academic adjustment as measured by attendance and grades. The findings suggest early adolescents are able to perceive differences in the type and amount of support provided by parents, teachers and friends. There also was preliminary evidence to suggest that social support may indirectly affect

psychological adjustment to school transitions.

An additional finding was that students did not experience significant amounts of transition stress in either of the two schools participating in the study. These schools helped students cope with the transition by either preparing them for the change or decreasing the number of changes experienced. It appears that both approaches were effective in helping students adjust to the transition from elementary to junior high school.

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Chapter 1

Introduction

Overview

Children frequently are faced with changes in their environment to which they must learn to adapt. School transitions are one of these changes. School transitions can include initial school entry, transferring from one school to another, and changing levels of schooling (Ladd & Price, 1987).

There are two main reasons why researchers believe the transition adolescents make from elementary school to junior high or high school is a difficult one. First, researchers are concerned with the number of changes that adolescents face during this period. The academic changes such as attending a new school, having different teachers, and changing classes usually coincide with social and biological changes (e.g., dating and puberty; Simmons, Blyth, Van Cleave, & Bush, 1979). Second, researchers are concerned that the organization of junior high and high schools does not meet the psychological needs of early adolescents (e.g., Eccles & Midgley, 1990).

Researchers who study this transition appear to be divided into two camps: those who believe the transition is detrimental to students and those who believe the transition has no appreciable effect on students. For example, some researchers have found a decline in self-esteem after the transition (e.g., Simmons, et al., 1979) whereas others have noted no change (e.g., Nottelmann, 1987). Because of the variability in research findings, the focus has turned away from large group differences to individual differences that may cause some students to experience transition difficulties more than others.

In the past five years there has been increased attention to the role social support plays in mediating the stress of the transition (e.g., Barone, Aguirre-Deandreis, & Trickett, 1991). Sandler and his colleagues (Sandler, Miller, Short, & Wokchik, 1989) defined social support as "a source of resilience to the extent that it positively affects intervening processes by which stressful situations lead to maladjustment in children and adolescents" (p. 277).

The purpose of this study is to examine the social support network surrounding adolescents as they enter junior high school. In particular, the focus will be on the types of social support provided by three different sources: peers, parents, and teachers. Many researchers have focused on the effects of peer support on students' social, emotional, and cognitive adjustment to junior high school (e.g., Berndt & Hawkins, 1991a; Hirsch & Dubois, 1991; McDougall, Hymel, & Deep, 1992). The measures of peer support have varied as have the adjustment variables, however, the general conclusion is that having friends or perceiving support from friends has a protective effect on adjustment to a school transition.

Less is known about parental and teacher support because only one study has compared social support from peers, family, and school personnel (Barone, et al., 1991). The exclusion of parents as a potential source of support for early adolescents is surprising because researchers have found that parents are more influential than peers during early adolescence (e.g., Berndt, Miller, & Park, 1989). Teachers also have been considered significant sources of help and influence for young adolescents (e.g., Cauce, Felner, & Primavera, 1982). Evidence from the limited number of studies indirectly examining teacher and parent support suggests both facilitate adjustment to a school transition (e.g., Berndt, et al., 1989; Felner, Ginter, & Primavera, 1982).

Thus, early adolescents making the transition to junior high or high school receive support from a number of different sources including peers, family, and teachers. Many researchers have stressed the importance of examining these different sources of support and the roles they play in mediating the stress of the school transition. For example, Siedman suggested supportive nonfamilial adults may be very important in early adolescents' lives (Siedman, Allen, Aber, Mitchell, & Feinman, 1994). Dubois and his colleagues (1992) suggested that teacher support would be very important by compensating for poor home environments. And Hirsch and Dubois (1992) stress the need to measure different sources of support and not focus just on peers as many researchers have done. The one study that included measures of support from peers, family, and school personnel (Barone, et al., 1991) found general support from these three sources correlated with positive adjustment measures after the school transition.

Unfortunately, the Barone et al. (1991) study did not differentiate between the different types of support each of the sources provided. Furman and Buhrmester (1985) indicated that parents, peers, and teachers provide different types of support and social provisions. Further, Sebald (1989) has shown that parents of adolescents are more influential than peers when education is considered and friends are more important than parents with respect to social issues. Therefore, while the Barone study made advances in the research by including family and school personnel as potential sources of support, more information could be gathered by determining the type of support each source provides.

In response to this criticism, a second major feature of this study will be the measurement of different types of social support. Many theorists have criticized the research on social support and stressful life events in adolescents because global measures of support are used and little information is therefore gleaned from the studies (e.g., Heller & Swindle, 1983). To address this issue, I plan to measure four types of social support: emotional, informational, social companionship, and instrumental. Emotional support refers to information that a person is esteemed and accepted; informational support is help defining, understanding, and coping with problematic events; social companionship is time spent with others in leisure and recreational activities; and instrumental support is the provision of financial aid, material resources, and needed services (Cohen & Wills, 1985).

Researchers have made advances in understanding the effects of social support by providing evidence that some types of peer support have a protective effect on adjustment to school transitions. Knowing that social support has a positive effect on adjustment begs the question, how does social support mediate adjustment? Beginning to understand the processes by which social support affects adjustment will provide a more conceptual view of the issues and hopefully lead to a more theoretical approach to the research instead of the disjointed methods now used. For example, researchers continue to use measures conceptualizing social support as a single unit despite theorists defining multiple categories of social support (e.g., Barrera, 1986). Also, researchers still are focused primarily on peer support and, the choice of variables representing adjustment to the school transition varies greatly dependent seemingly on the whim of the researchers. By understanding more specifically how social support mediates adjustment, appropriate interventions may be implemented to help students at risk of poor school adjustment and related outcomes (e.g., school dropout; Eccles, Midgley, & Adler, 1984). For example, teachers may be able to provide additional informational support for students with low levels of support from family. Or peer support groups may be set up to help students with little support from other sources.

To better understand the process by which social support mediates adjustment to school transitions the present study will address two research questions. First, when making a transition to junior high school, do students perceive any differences in the type or amount of support they receive from peers, parents, and teachers? Furman and Buhrmester (1985) found fifth- and sixth-grade students rated relationship qualities differentially for various people in their social networks. Based on their findings it is hypothesized that parents will be perceived as providing the most emotional and instrumental support for early adolescents. Social companionship support will be perceived as a source of support most common to peers and instrumental support will be perceived as the most common support from teachers.

The second research question asks whether different types of support mediate adjustment in different domains (i.e., social, emotional, and academic). In other words, do different types of support serve different functions? From the research on social support, it is clear that support can be a protective factor when adjusting to a school transition but what is not clear is how support mediates adjustment. I am proposing that different types of support serve different functions resulting in adjustment in related areas. For example, researchers have shown social companionship has a positive effect on measures of social adjustment (Berndt & Hawkins, 1991a, 1991b; McDougall, et al., 1992). Thus, perceived social support from peers is hypothesized to predict social adjustment following a school transition. Support from peers and family have been correlated with decreased anxiety, increased self-esteem, and improved school performance (e.g., Barone, et al., 1991; Berndt et al., 1989; Berndt & Hawkins, 1991a, 1991b; Hirsch & Dubois, 1991, 1992). Because many of these general measures of social support are similar to emotional support, it is hypothesized that emotional support from parents and peers will predict emotional and academic adjustment following a school transition.

Summary of the Present Study

The present study examined different types of social support from different sources to determine the processes by which social support mediates the stress of school transitions. Sixth grade students were followed as they made the transition to junior high school. Students were asked to complete a series of questionnaires designed to evaluate the strength and types of support they received from three major sources: peers, parents, and teachers. The types of support examined included informational, instrumental, emotional, and social companionship support (e.g., Berndt, 1989). Ratings of stress experienced and measures of social, emotional, and academic adjustment also were collected. Questionnaires were completed in the spring of sixth grade, within the first two weeks of junior high school when the stress of the transition was anticipated to be high, and three to four months later when the students were more familiar with their new schools.

Chapter 2

Literature Review

In this chapter I will review the research examining stressful life events and their effects on individuals, particularly adolescents, followed by the relationship between social support and stress. The findings from studies examining social support and the adjustment to school transitions will be reviewed.

Stress and Stressful Life Events

The study of stress and stressful life events has had a long history. For many years, researchers have recognized the negative effects stress has on individuals by putting demands on them that exceed their normal coping resources. How well people adjust to stressful changes varies with differences in individual coping skills. These coping skills are moderated by a number of variables including personal characteristics (e.g., sense of control versus powerlessness), prior experience with stressful events, and available support systems (e.g., Sterling, Lowen, Weissberg, Lotyczewski, & Boike, 1985). When people experience stressful events that exceed their coping resources, emotional or physical problems may result. In fact, DeLongis and her colleagues believe that many researchers continue to study stress because of the data which support its link with physical illness (DeLongis, Folkman, & Lazarus, 1988).

Recently, researchers have been focusing more attention on the role of stress and stressful life events in adolescence. Adolescence is considered an "especially interesting and potentially significant period of development for the investigation of stress and coping processes" (Compas, Davis, & Forsythe, 1985, p. 677) for three main reasons. First, adolescence is rife with changes in biological, cognitive, and social functioning (e.g., Simmons, Burgeson, Carlton-Ford, & Blythe, 1987) and change is considered an inherent component of stress by many researchers (e.g., Compas et al., 1985). Second, in addition to change many theorists have argued that transitions (i.e., periods of change and adaptation) are also important components of stress and especially common to adolescents. For example, adolescents make transitions changing schools from elementary to junior high or high school, then to college or work, and from living with parents to living independently. Finally, cognitive and social development during adolescence makes it an optimal time to learn coping skills to deal with the adverse effects of stressful events (Compas et al., 1985).

Compas (1987) reviewed the research that has addressed adolescence and stressful life events and found that the studies come from two groups of researchers with different interests. The first group are social scientists interested in the relationship between stressful life events and subsequent psychological and/or physical disorders. While much of this work fails to provide a clear operational definition of stress or stressful life events, most researchers focus on stimuli that exert demands or adaptational responses from the child or adolescent. These demands can be chronic in nature such as a physical disability, degenerative disease, or living in poverty. Or the demands may be acute with a clear beginning against which change can be measured (e.g., changing schools, parental divorce, birth of a sibling).

The second group of researchers are interested in the role life events plays in development across the life span. These events are not assumed to be stressful or a potential source of pathology but are seen as states of disequilibrium which may make positive developmental changes possible (Compas, 1987).

Different types of studies have been generated by these researchers. The life-span developmental theorists have argued the need for a pool of events that are characteristic of a given age group. With respect to adolescents, Compas and his colleagues (Compas et al., 1985; Compas, Davis, Forsythe, & Wagner, 1987) asked 658 adolescents ranging in age from 12- to 20-years to generate a list of daily events and major events that had occurred in the past six months. The lists resulted in a set of 213 nonredundant events experienced by adolescents. The list and similar lists of life events (e.g., Swearington & Cohen, 1985) are often used by researchers as an indication of stress. The more items on the lists that have occurred in a given period of time, the greater the stress experienced.

Another avenue in the study of life events in adolescence is the examination of outcomes of a single stressful life event experienced by a group of adolescents. Examples of such events studied include parental divorce (e.g., Wallerstein & Kelly, 1980), birth of a sibling (Dunn & Kendrick, 1980), and school transitions (e.g., Felner et al., 1982). Two important points need to be noted here. First, the research on single life events has not resulted in a clear and direct relationship between that event and maladaptive functioning (Compas, 1987). The variability in children's responses to divorce led Felner (Felner, Farber, & Primavera, 1980) to conclude that examining global differences between children of divorce with matched controls was not fruitful. What should be examined, however, are individual differences in outcome measures. The second point is that these single life events may be construed as a series of smaller events (Felner et al., 1980). For example, a school transition may be broken down to a number of smaller events or daily events such as finding one's locker, making new friends, and learning new routines. From this perspective, the outcome of a single life event may be a function of coping and adjusting to a series of smaller events (Compas, 1987).

The majority of researchers in the area of stressful life events and adolescence have examined the relationship between these events and physical and/or psychological dysfunction. Many cross-sectional studies have been conducted in which retrospective reports of life events and measures of physical and/or psychological well-being are collected at the same time. Despite the variability in measures, the results are highly consistent: positive correlations have been found between number or frequency of life events and levels of psychological and physical dysfunction (see Compas, 1987 for a review).

Some researchers have used prospective designs to examine the relationship between stressful life events and psychological and physical adjustment. Number or frequency of life events is measured prior to assessment of psychological or physical well-being. Very little support for a causal relationship between major life events and later symptomatology has been found. In fact, the majority of these prospective studies found a significant relationship between symptom levels and later negative life events. In other words, the symptoms were better predictors of subsequent life events than were the events of subsequent symptoms (see Compas, 1987 for a review).

One explanation for these findings is that chronic stressors like daily hassles (e.g., irritating, annoying, or upsetting daily events) or characteristics of the psychosocial environment may better explain psychological and/or physical symptoms than major life events (Compas, 1987). Compas and his colleagues found support for this hypothesis (Wagner, Compas, & Howell, 1988). Major events predicted daily events and daily events predicted symptoms but no direct relationship was found between major events and symptoms. In short, daily events or daily hassles mediated the relationship between major stressful life events and symptomatology.

Widely debated recently, is the difference between stress caused by major life events (e.g., graduating from high school, parents divorcing) versus minor daily events called daily hassles (e.g., taking care of a younger sibling, doing homework). Lazarus and DeLongis (1983) defined hassles as"irritating, frustrating, distressing demands and troubled relationships that plague us day in and day out" (p. 247). Lazarus and his colleagues began examining the effects of hassles on psychological stress in adult populations in the early 1980s (Kanner, Coyne, Schaefer, & Lazarus, 1981). They found the relationship between daily hassles and psychological stress was stronger than a measure of major life events and psychological stress. In a longitudinal prospective study, DeLongis and her colleagues (DeLongis, et al., 1988) found a significant relationship between hassles and concurrent and subsequent health problems. Moreover, subjects without high emotional support and with low self-esteem had greater psychological and somatic problems following stressful days. While some theorists disagree with the conceptualization and measurement of hassles (e.g., Dohrenwend & Shrout, 1985) studies continue to provide evidence of the relationship between hassles and psychological and physical maladjustment.

This area of research has been extended to populations of children and adolescents with findings similar to studies with adults. For example, Kanner found a measure of age-appropriate hassles (e.g., "kids at school tease you," or "you had to clean up your room") was significantly related to measures of anxiety, depression, and stress in sixth grade students (Kanner & Feldman, 1991; Kanner, Feldman, Weinberger, & Ford, 1987). The more hassles the children reported, the greater was their level of anxiety, depression and stress. Thus, hassles appear to be good measures of stress and good predictors of psychological and physical adjustment in adults and adolescents. I will now turn to the research on social support as a mediator of stress in adolescents.

The Development of Social Support Research

In the last 20 years a great deal of attention has been focused on the positive role social support plays in mediating stressful events (e.g., Cobb, 1976). However, the genesis of this body of work has roots dating back to the second world war with reference group theory which sought to determine how an individual "takes the values and standards of other individuals and groups as a comparative frame of reference around which attitudes and behaviours are shaped" (Heller & Swindle, 1983, p. 88). Even though the term social support was not being employed, the influence of a social group on the development and maintenance of an individual's behaviour and attitudes was acknowledged and well studied.

Following from the reference group theory was Festinger's social comparison theory, the basis of which was that "individuals have a drive to evaluate their opinions and attitudes through comparison with either objective standards or the behaviour of others" (Heller & Swindle, 1983, p. 88). Often in social situations objective standards are not available therefore comparisons with the behaviour of others results. Of relevance to the social support research was the focus on individuals' motivation for affiliation with others when in stressful situations. Researchers found that individuals prefer to be with others when they are emotionally aroused (e.g., Sarnoff & Zimbardo, 1961). Also, the preference for affiliation was particularly strong when the others were similar in personality to the subject (Miller & Zimbardo, 1966). Later research revealed that decreased anxiety resulted when individuals were in the company of those with whom they had previously had positive interactions (Geen & Gange, 1977) or when said companions acted in a calm and sympathetic manner (Epley, 1974).

Researchers studying social support have examined a range of dependent variables moving from simple attitudinal measures to self-concept, performance and health-related outcomes. Heller and Swindle (1983) suggest the main reason for the current popularity of social support research is because of its preventive and therapeutic promise through environmental changes. As a result of the broad scope of the social support research, there have been many different definitions and types of social support proposed.

The Definitions of Social Support

With regard to definitions, Gottlieb (1983) lamented that "with each new study, a new definition of social support surfaced" (p. 50). The definitions vary greatly with respect to their degree of specificity and the breadth of transactions encompassed (Wolchik, Sandler, & Braver, 1987). For example, in Cobb's seminal paper on social support (1976), he focused on an individual's self-esteem and place in a social network. He defined social support as "information leading the subject to believe that he is cared for and loved, esteemed, and a member of a network of mutual obligations" (p. 300). Other theorists have focused more on the behavioural aspects of social support such as activities directed at helping others master emotional stress, sharing tasks, giving advice, teaching skills, and providing material assistance (Barrera, Sandler, & Ramsey, 1981).

Later Barrera (1986) argued that the concept of social support was too global and should be abandoned in favour of more precise terms. He suggested that social support be divided into three general categories: social embeddedness, perceived social support, and enacted support. Social embeddedness refers to the connections individuals have to significant others in their social environment and could be measured using indices such as number of friends and family or frequency of interactions with them (see also Heller & Swindle, 1983). Perceived social support is regarded as the "cognitive appraisal of being reliably connected to others" (Barrera, 1986, p. 416). Perceived support measures the availability and adequacy of social support individuals believe they have whereas social embeddedness quantifies the number of supporters or the amount of social contact. Finally, enacted support refers to the actions other perform when they render assistance to the individual (Barrera, 1986). This third concept focuses on the behavioural aspects of the support provided.

Enacted Support

Of particular relevance to the present study is the concept of enacted support. Other researchers have examined social embeddedness or the social networks adolescents have with their peers and the results have generally indicated positive, stable friendships are related to positive social adjustment (e.g., Berndt & Hawkins, 1991a; McDougall, et al., 1992). Many researchers, however, have called for greater specificity when examining social support by examining specific types of support (e.g., Heller & Swindle, 1983). Enacted support provides that specificity.

Informational Support. Different researchers have conceptualized enacted support in different ways (e.g., Furman & Buhrmester, 1985), however the most common types of enacted support are informational support, instrumental support, emotional support and social companionship (e.g., Berndt, 1989; Cohen & Wills, 1985). As indicated earlier, informational support refers to help defining, understanding, and coping with problematic events (Cohen & Wills, 1985). Similarly, Berndt (1989) considers it the advice or guidance that may help a person cope with a problem. It is possible to perceive parents or teachers giving students guidance or information to help them cope with the transition to junior high school.

Within the realm of friendship, informational support is referred to as "intimacy" by most researchers (see Berndt, 1989). Sullivan (1953) considered the emergence of intimate self-disclosure to be a hallmark of the change in friendship between childhood and adolescence. Indeed, research evidence supports his views. Intimacy has been found to be an important aspect of early adolescents' friendships but rarely is mentioned among younger children. This finding suggests that friendships become more supportive and important relationships during early adolescence (Berndt, 1989).

Studies of adolescents' friendships have shown a gender difference with girls' friendships being more intimate than boys' friendships (Berndt & Perry, 1990). Some theorists suggest this gender difference reflects a developmental lag with boys catching up later in adolescence, some believe the difference persists throughout life, whereas others suggest the difference reflects different styles of friendship (Buhrmester & Furman, 1987). Regardless of the reason for the difference in early adolescents' intimacy levels of friendship, gender is an important factor to consider when studying adolescent peer relations.

Instrumental Support. Instrumental support or tangible support is the provision of resources or services necessary to help solve practical problems (Berndt, 1989; Cohen

& Wills, 1985). An example of a question measuring instrumental support would be whether a friend would be willing to share lunch or lend the subject money if needed (e.g., Berndt & Perry, 1986). Adults as caregivers provide children with material resources to meet their needs and early adolescents have been shown to value sharing equally with friends more than elementary school children (Berndt, 1989).

Emotional Support. Emotional support refers to information that a person is esteemed and accepted (Cohen & Wills, 1985). It may include statements or actions that convince individuals of their own worth or value (Berndt, 1989). Many measures of social support tend to focus on the subjects' perceived emotional support from friends and family (e.g., Wolchik et al., 1987). Early adolescents have been found to turn to parents, teachers, and friends for enhancement of worth (Furman & Buhrmester, 1985). Sullivan (1953) suggested there would be an increase in the degree to which friends enhance each other's self-esteem as they move from childhood to adolescence. Unfortunately, the research available has not been able to address this developmental issue because of measurement problems or few age groups assessed (Berndt, 1989).

Social Companionship. Social companionship or spending time with others in leisure or recreational activities is considered supportive (Berndt, 1989). This type of support may reduce stress by "fulfilling a need for affiliation and contact with others, by helping to distract persons from worrying about problems, or by facilitating positive affective moods" (Cohen & Wills, 1985, p. 313). Some researchers have measured social companionship by using objective means (e.g., actual number of friends, time spent with friends or family; see Berndt & Perry, 1986) but this is the same as measures of social embeddedness (e.g., Barrera, 1986). Ratings of perceived companionship (e.g., Do you spend free time with (name)?; Berndt & Perry, 1986) although more subjective, can tap into the affective quality of the relationship.

Evidence that children receive different types of support from different sources comes from Furman and Buhrmester (1985) who investigated the similarities and differences among the various relationships in children's social networks. Nearly 200 fifth and sixth grade students answered a questionnaire assessing ten relationship qualities. Of particular relevance to the present study was the inclusion of questions measuring enhancement of worth (similar to emotional support), instrumental help (instrumental support), and companionship (social companionship). There was no measure for informational support although instrumental help also included guidance or advice. The subjects answered the questionnaires for nine different relationships including both parents, a grandparent, older and younger brothers and sisters, best friend, and teacher.

Enhancement of worth was rated as occurring the most in children's relationships with parents, then grandparent, siblings, and friends, and finally, teachers. Instrumental help occurred the most in the parent-child relationship, followed by teacher-, friend-, grandparent-, and sibling-child relationships. Each of these ratings was significantly different from the others. Companionship was most common in relationships with friends, then parents and siblings, grandparents, and teachers. From these findings, it would appear that parents are a major source of emotional and instrumental support for their children, while friends provide companionship and teachers provide instrumental support.

How Social Support Mediates Stress

Many researchers have been interested in determining the means by which social support may affect psychological adjustment following stressful situations (see Cohen & Wills, 1985, for a review). The two major hypotheses are the main effect and the buffering effect. Because a great deal has been written about these possible effects elsewhere (e.g., Barrera, 1986; Cohen & Wills, 1985) the present review will be brief.

The analogy to best understand the difference between the main and buffering effects is that of main effects and interaction effects in an analysis of variance where social support and level of stress are independent variables and psychological adjustment is the dependent variable. The main effect model proposes that social support has a beneficial effect on an individual's psychological adjustment regardless of the level of stress being experienced. In other words, no matter how much stress one is experiencing, individuals with high levels of social support will have positive psychological adjustment. Theorists suggest that in the main effect model social support provides a sense of predictability and stability to individuals and hence enhances self-esteem and leads to positive affect (Wolchik et al., 1987).

The buffering effect model suggests an interaction between levels of stress and levels of available social support. Social support is related to psychological adjustment only for those individuals experiencing stress (Wolchik et al., 1987). Moreover, those individuals experiencing high levels of stress will be better adjusted when they have high levels of social support as compared to those individuals with low levels of social support. Within this model, support from others may decrease the impact of the stress by providing solutions to the problems, reducing the perceived importance of the problems, and/or reducing the degree of threat posed by the problems (Wolchik et al., 1987).

The debate as to how social support mediates stress has produced a large number of studies. Cohen and Wills (1985) reviewed the research and concluded that there was evidence supporting both models. The buffering model was supported when the measures of social support were specific and measured the perceived availability of interpersonal resources that were responsive to the problems that the stressful events produced. The main effect model was supported when more general measures of an individual's integration in a social network were measured.

School Transitions

The transition from elementary to junior high or high school has received a great deal of attention from both researchers and the popular press (e.g., Eccles et al., 1984; McKeen, 1996). Many researchers have expressed concern about the increased stress that students must cope with when they make the transition to junior high school. Blyth and his colleagues (Blyth, Simmons, & Carlton-Ford, 1983) consider the transitions disruptive because of the changes in school size, peer groups, and in the students' status. When in elementary school, the grade six students are "top dogs" but once they move to junior high school they become "bottom dogs."

Findings from case studies and anecdotal reports reflect the stresses students experience during the transition to junior high school. For example, Mergendoller and his colleagues (Mergendoller, Swarthout, & Packer, 1982) reported narrative descriptions of four seventh grade students and their experiences as they made the adjustment to junior high school. One general theme they found throughout the four narratives was the concern about being popular with same- and opposite-sex peers.

Empirical studies by Snow (Snow, Gilchrist, Schilling, Schinke, & Kelso, 1986) and Mitman and Packer (1982) assessed sixth and seventh grade students' concerns about junior high school. Many of the students' concerns could be classified as social, academic, or practical problems. Social concerns included not having a boyfriend or girlfriend, maintaining old friendships and developing new ones, coping with peer pressure, and not getting bullied or beaten up by older students. Some of the academic concerns students had were about tests and report cards, getting work done on time, having too much homework or that the homework would be too difficult, and that the junior high school teachers would be academically more demanding than elementary school teachers. Some practical concerns students mentioned were getting to class on time, finding the different classrooms, and remembering locker combinations. Thus students have indicated a number of concerns that make junior high school challenging and potentially stressful.

Eccles and her colleagues (e.g., Eccles & Midgley, 1989; Eccles et al., 1993) believe early adolescents are at risk when they make the transition to junior high school because there is a mismatch between the school organization and teaching style of junior high school teachers and adolescents' psychological needs. For example, students in seventh grade indicated that they would like more autonomy and decision-making opportunities regarding their school work than did sixth grade students. However, the researchers found that seventh grade teachers believed that students should have less autonomy and decision-making opportunities than did sixth grade teachers (e.g., Midgley, Eccles, & Feldlaufer, 1991). Other differences Eccles has found included increased social comparison in junior high school when early adolescents are experiencing heightened self-consciousness, academic tasks in junior high school requiring lower cognitive skills than sixth grade work, and higher standards in grading this less cognitively demanding work (e.g., Anderman & Midgley, 1997; Eccles & Midgley, 1990). Because of the mismatch between the school environment and the students' developmental stage of psychological needs, the transition becomes a difficult time for students and hence, they are at risk for a variety of negative outcomes. Eccles calls this the stage-environment fit theory and has proposed changes to the structure of junior high schools to eliminate this mismatch (Eccles, Lord, & Midgley, 1991).

An alternative interpretation was put forth by Simmons and her colleagues (e.g., Simmons, Burgeson et al., 1987). They theorize that the negative effects are a result of the number of changes in many different domains (e.g., academic, social, biological) that early adolescents go through. Without stability in any of these domains, adolescents feel insecure and their ratings of self-esteem decline. This phenomenon is especially prominent in girls who often are coping with puberty, the transition to junior high school, and beginning to date all at the same time. Simmons suggests that these cumulative changes without any "arena of comfort" or domain that is not undergoing major changes, in addition to the structural differences in junior high school (e.g., larger classes and more students than elementary school) cause a number of detrimental effects.

Researchers have examined a variety of different outcome effects of school transitions. Some of the effects are chosen to test a particular theory. For example, Eccles and her colleagues have conducted a series of studies that have found support for her stage-environment fit theory by noting declines in a number of variables including students' ratings of perceived input and autonomy in the classroom (Feldlaufer, Midgley, & Eccles, 1988), and ratings of how much students like mathematics, English, and sports activities (Wigfield, Eccles, MacIver, Reuman, & Midgley, 1991). Other outcome variables appear to be included in studies not for theoretical reasons but for descriptive purposes. For example, Hirsch and Rapkin (1987) found students to be less satisfied with and less committed to school following a school transition.

Not all studies have found school transitions produce negative effects on students. For example, Nottelmann (1987) found no change in students' perceived competence and self-esteem and Eccles and her colleagues (Eccles et al., 1989) found no change in students' self-concept of their social skills. Other researchers have found no changes in students' perceptions of school demands (Fenzel, 1989), in attitudes toward music class (Haladyna & Thomas, 1979), or anxiety in students who had high ratings of perceived competence and intrinsic motivation (Harter, Whitesell, & Kowalski, 1992).

While researchers have studied the effects of school transitions on a wide variety of variables there are only a few variables that best represent adjustment: self-esteem, anxiety, grade point average (GPA), attendance and loneliness. These variables are considered stronger than some of the other variables listed above for three reasons. First, there is theoretical support for their inclusion. Simmons' arena of comfort theory claims that without stability in adolescents' social, academic, or biological domains, students begin to feel insecure, anxious, and their self-esteem declines (Simmons, Burgeson, et al., 1987). For GPA and attendance, Eccles would argue the mismatch between the school environment and adolescents' psychological needs would result in poor academic adjustment. Further, changes in the peer network would lead to feelings of loneliness if previous friends have different timetables and classes.

Second, these variables have been studied by a number of different researchers indicating agreement on their relevance as measures of adjustment to school transitions. Finally, these variables are representative of three different domains (emotional, academic, and social) reflecting the multidimensional nature of early adolescence that Simmons proposed (Simmons, Burgeson, et al., 1987).

Emotional Adjustment. Self-esteem and anxiety are categorized here as types of emotional adjustment. Self-esteem has been included in school transition studies more often than any other outcome variable. Decreased self-esteem, especially for girls, has been shown in numerous studies (e.g., Blyth, Simmons, & Bush, 1978; Eccles et al., 1989; Simmons, Carlton-Ford, & Blyth, 1987; c.f., Proctor & Choi, 1994). There are however, some studies that have had results indicating no changes in self-esteem (e.g., Eccles et al., 1989; Nottelmann, 1987). Because some inconsistent findings have been found it is possible that there are some other variables mediating the effects of a school transition on self-esteem. For example, peer support has been found to be negatively correlated with levels of anxiety following a transition (Barone et al., 1991; Hirsch & Dubois, 1992). Thus it would appear relevant to determine whether social support does mediate self-esteem and whether social support from sources other than peers mediates levels of anxiety.

Academic Adjustment. The stage-environment fit theory predicts that students' academic performance would be worse following a school transition to junior high school than prior to that transition (Eccles et al., 1993). Many researchers have found that students' GPA declines following a transition (e.g., Schulenberg, Asp, & Petersen, 1984; Simmons, Black, & Zhou, 1991). A different measure of academic adjustment that has been used is school attendance. Following a school transition, students have been found to miss more days of school than prior to that transition (e.g., Barone et al., 1991; Felner, Primavera, & Cauce, 1981). GPA and attendance are therefore two important aspects of academic adjustment to school transitions.

Social Adjustment. School is a social environment in which ones' sociometric status is very important. Not having friends or even worse, being rejected by peers has been shown to be associated with a number of negative outcomes (e.g., school dropout; Parker & Asher, 1987). School transitions usually disrupt children's social networks as children enter larger schools with more students from a number of different feeder schools (Eccles & Midgley, 1989). As a result, many early adolescents report feeling lonelier, more anonymous and less integrated with their peer group after a transition unless specific efforts are made to keep students with their feeder school peers (e.g., McDougall et al., 1992). For more information regarding the importance of the peer group see the section below on peer support.

In summary, these outcome variables are generally agreed upon by researchers to be highly applicable to the adjustment to school transitions and are theoretically relevant. In addition they also are of practical importance. It is self-evident that researchers and educators should strive to ensure that students maintain a strong sense of self-worth, are not overly anxious, are socially integrated and are achieving their maximum academic potential as they continue from one level of schooling to the next.

To decrease the number of changes early adolescents experience in junior high school and consequently reduce the negative effects associated with the transition, some researchers advocate policy changes (e.g., Anderman & Maehr, 1994; Jackson & Hornbeck, 1989). Others are beginning to investigate individual differences that work as protective factors against the stress of school transitions. One factor that has received increased attention over the past six years is social support. For example, Dubois and colleagues (Dubois et al., 1992) found stressful life events and poor social support put early adolescents at greater risk for psychological stress (e.g., depression, anxiety). And Ingraham (1985) suggests increasing students' social support systems to help them cope with the school transitions. For early adolescents three major sources of social support have been examined: peers, family, and school personnel.

Peer Support

The social support adolescents receive from their peers has been the focus of most of the research in this area. The positive effect peer support has on a number of adjustment factors has been documented in three studies. Barone and colleagues (Barone et al., 1991) examined the transition adolescents make from middle school to high school (i.e., from eighth to ninth grade). Their general measure of perceived peer support was significantly correlated with state anxiety measures. This negative correlation suggested that the more perceived support adolescents felt they were getting from friends, the less anxiety they felt when tested three months into ninth grade.

Hirsch and Dubois (1991) followed adolescents from elementary to junior high school. Included in their battery of measures was peer support. It was conceptualized as the extent to which the students were engaged in a supportive social network with peers and was measured with a 12-item self-report scale. Children completed the questionnaires at the end of sixth grade, middle and end of seventh grade, and at the end of eighth grade. Students who consistently had low self-esteem scores at all four data collection times indicated significantly lower levels of perceived peer support than the other students.

When comparing peer support with measures of psychological symptomatology (depression, anxiety, and somatization) Hirsch and Dubois (1992) found a significant negative correlation between peer support at the end of sixth grade and psychological symptoms during the middle of seventh grade. Students who had reported greater perceived peer support exhibited fewer psychological symptoms following the transition to junior high school. While these results are correlational, they do suggest a possible protective feature of peer support for students making the transition to junior high school.

Many other studies have examined the role of friendship in facilitating adjustment following a transition to junior high school but have not measured actual peer support. Often the presence of familiar peers or stable friendships over the transition is related to positive adjustment outcomes. Berndt and Hawkins (1991a, 1991b) examined adolescents' friendship qualities and asked the students to rate positive qualities about their closest friends on a 5-point scale. Positive features of friendship included intimate self-disclosure, intimate knowledge, faithfulness, and exclusiveness or preference for dyadic over group interactions. They also measured the stability of the adolescents' friendships from sixth to seventh grade. Adolescents who had friendships with many positive features were better adjusted to school in seventh grade after the transition to junior high school; they had higher grades and lower misconduct ratings than students without friendships with high positive features. Stable friendships were significantly related to post-transition ratings of high sociability and low aggression.

Other researchers have tested the hypothesis that encouraging stable friendships over the transition helps facilitate adjustment. Felner and his colleagues (Felner et al., 1982) conducted a project designed to facilitate students' coping efforts during the transition from an elementary school eighth grade to ninth grade in high school. The project was designed to increase the levels of peer and teacher support during the transition to high school. Students involved in the project were assigned to homeroom teachers who acted as guidance counsellors and performed many of the administrative duties such as contacting parents when a student was absent from class. Most of the teachers eligible to participate in the study volunteered to be in it. Of the volunteers, the researchers chose teachers based on the academic subject they taught and the physical location of their classrooms in the school. The idea was to keep the students involved in the study close together to decrease the complexity of the school environment. Peer support was encouraged by keeping the students together for many of their classes. The researchers' goal was to increase the students' sense of belonging and the stability of the environment.

Compared to the control group, the students in the project were absent significantly fewer days, had higher grade point averages, had more positive feelings about school, rated teachers as more supportive, felt more involved in school and their self-concept scores remained stable while the control subjects' scores declined over the transition. While Felner and his colleagues concluded that the positive adjustment to the transition was because of increased levels of social support from peers and teachers, they failed to measure social support. A direct relationship between increased peer support and positive adjustment measures was not found, merely inferred.

A more recent study examined the effect of simply keeping students together in seventh grade with familiar peers from sixth grade (McDougall et al., 1992). Some students entering junior high school were kept together with classmates from their feeder schools (intact group) and others were mixed with students from other feeder schools (mixed group). No other changes to the school program or structure were made. Students in the intact groups were asked to indicate how many of their close friends (many, only a few, none) from sixth grade were in their present seventh grade class. This manipulation check verified the adequacy of the program to keep students together with familiar peers. The data from a few students who did not find they had close friends from sixth grade in their seventh grade class were discarded. The effects of this class grouping did not impact on students' academic achievement, self-concept, or attitude toward school. Students in the intact groups did report significantly less loneliness, and significantly more feelings of peer integration and intimacy, and happiness with their class composition than students in the mixed class groupings.

The evidence suggests that peer support has a protective effect on students' adjustment during the transition to a new school. What is not clear is how that support facilitates adjustment. It is possible that having the security of stable and positive friendships eases the anxiety about the social changes that occur in the new school. It is also possible that peers provide adolescents with encouragement to increase their self-esteem or that information is shared to help cope with their new school environment. The present study will attempt to examine the process of how peer support facilitates adjustment following a school transition.

Family Support

The lack of research including parental and familial support is surprising given the attention researchers have paid to early adolescents' shifting orientation from parents to peers (e.g., Berndt et al., 1989; Sebald, 1986). As children get older they tend to spend less time with family and more time with peers (Epstein, 1989); however, time spent with family and parental influence on early adolescents is still quite high (e.g., Csikszentmihalyi & Larson, 1984). Blyth, Hill, and Thiel (1982) found seventh grade students cited parents most often when asked to list significant people in their lives. And parents were rated high on nurturance and intimacy by seventh grade students (Furman, 1989) which was comparable to similar ratings for peers (Hunter & Youniss, 1982). Sebald (1986) found high school students rated parents as more influential than peers with respect to financial matters, career, and educational issues. Peers were considered more influential than parents only when social issues were considered.

Examining the school transition research reveals only one study that included measures of support from family (Barone et al., 1991). A 20-item self-report scale measured perceived support from family but did not specify who "family" included. This general measure of support was significantly correlated with three adjustment measures. Specifically, the more perceived support they received from family, the higher the adolescents rated the quality of school life, the lower their state anxiety was after the transition to high school, and the less difficult they felt the tasks of their new social environment were.

Students also perceive their parents as having more influence than peers when adjusting to junior high school. Berndt and his colleagues (Berndt et al., 1989) found that seventh grade junior high school students perceived their parents as having more influence on their attitudes, behaviours and performance in school than their friends. Only a minority of the students in the study perceived their friends as influencing the various aspects of their adjustment to school. Other researchers also have suggested the importance of including measures of family support when examining the social support systems of early adolescents (e.g., Brown, 1989; Fenzel & Blyth, 1986; Hirsch & Dubois, 1991). Parents would therefore appear to be an important source of support to consider in school transition research.

Teacher Support

Only one study has included direct measures of teacher or school personnel support on adolescents' adjustment to high school (Barone et al., 1991). Students rated the helpfulness offered by different school personnel such as teachers and guidance counsellors on a 5-point scale. Their ratings of perceived school support were significantly correlated with three measures of adjustment. The more perceived support received from school personnel, the higher the students rated the quality of school life, and the lower were their scores of state anxiety after the transition as well as their ratings of the difficulty of their new social environment.

Less direct evidence comes from the transition project by Felner and his colleagues (Felner et al., 1982). In their project homeroom teachers played a number of roles (e.g., guidance counsellor, administrator) in an effort to minimize the number of different school personnel with whom students had to deal. The goal was to increase the perceived support students received from their teachers. Students involved in the project did rate their homeroom teachers as more supportive than did control subjects. Further, students in the project missed fewer school days, and did not experience declines in their grade point average and self-concept ratings compared to the control subjects.

Limitations of Existing Research

Given the research findings to date, it appears that early adolescents making the transition to junior high or high school receive support from a number of different sources. Moreover, the support these sources provide is correlated with how well the students adjust to their new school environments. Many researchers have stressed the importance of examining these different sources of support and the role they play in mediating the stress of the school transition. As mentioned before, Seidman et al. (1994) believed supportive nonfamilial adults may be very important in early adolescents' lives. Dubois and his colleagues (1992) proposed that teacher support could compensate for poor home environments. And Hirsch and Dubois (1992) advocated measuring different sources of support instead of focusing only on peer support.

Surprisingly only one study has included measures of peer, family, and school personnel support (Barone et al., 1991). As described earlier, measures of general support from peers, family, and school personnel were positively correlated with adjustment measures after a school transition. This study, however, had a number of limitations. First, the researchers did not differentiate the different types of support each source provided. Furman and Buhrmester (1985) found that parents, friends, and teachers provide different types of support and social provisions to early adolescents. Therefore, while the Barone study made advances in the research by including family and school personnel as potential sources of support, more information could be obtained by determining the type of support each source provides.

A second limitation of the Barone study was that family was not specified. Furman and Buhrmester's study (1985) indicated that parents, grandparents, and siblings can play different roles in preadolescents' lives. Many researchers, however, have focused on parents and their changing influence during early adolescence (e.g., Berndt et al., 1989; Hunter & Youniss, 1982; Sebald, 1989). To avoid confounding ratings of family support, the present study will examine parents as a source of support.

Methodologically, the Barone study was different from most school transition studies. The subjects were asked to complete the questionnaires one month before they entered high school and again, approximately three months into their ninth grade. Most studies obtain baseline measures in the spring of sixth grade and test again in seventh grade. By testing during the summer holidays, the environment becomes an additional contextual confound. The friends students have during the summer may not be the same as friends during the school year therefore support ratings may change. Moreover, the stresses experienced during the summer may not be the same as stresses associated with school. Barone et al. acknowledged this confound in their methodology and suggested collecting data at multiple points to ameliorate the problem.

Finally, the students were from middle schools that fed into a larger high school. This transition would therefore have been their second major school transition in less than three years. Having been through one transition already, the students may not have experienced as much stress or needed as much support for this second transition. Indeed, Simmons (Simmons, Rosenberg, & Rosenberg, 1973) stated that the transition to high school has less effect on students' psychological adjustment than the transition to junior high school. Also, developmentally, early adolescents are coping with more changes physically, socially, and emotionally when making the transition to junior high school than to high school which may make the former transition more stressful than the latter (Simmons, Burgeson, et al., 1987). By examining the first transition students make, that is to junior high school, the stress experienced and support they need would be maximized and thus, better highlight the relationship between social support and adjustment. In short, the information from the study by Barone and his colleagues was illuminating but marred by methodological shortcomings and undifferentiated measures of support.

Summary

In summary, the present study has roots in two major areas of research: the study of stressful life events and the study of social support. School transitions have become a popular stressful life event to study because it is a common experience for most students at a developmentally turbulent time. Students' social support systems have become the focus of some of the research on school transitions as researchers look for individual differences that may affect successful adjustment to a new school. In particular, there are two factors that merit attention. First, is the importance of different sources of social support. Most studies have examined peer support but support from parents and teachers may be equally important. Second, is the need to clarify social support. Four types of enacted support have been defined as informational, instrumental, emotional, and social companionship. Both of these factors may significantly affect students' emotional, social, and academic adjustment to a school transition.

Chapter 3

Method

Review of the Study

The purpose of this study was to better understand the process by which social support mediates adjustment to an elementary to junior high school transition. To address this purpose, two research questions were asked. First, when making a transition to junior high school, do students perceive any difference in the type or amount of support they receive from peers, parents, and teachers? It was hypothesized that parents would be perceived as providing the most emotional support and instrumental support for early adolescents. Social companionship support would be perceived as a source of support most common to peers and instrumental support would be perceived as the most common type of support from teachers.

The second research question asked whether different types of support mediated adjustment in different domains (i.e., academic, emotional, social). It was hypothesized that different types of support would serve different functions. Specifically, social companionship support from peers would predict social adjustment and emotional support from parents and peers would predict emotional and academic adjustment following a transition to junior high school.

Subjects

The sample consisted of 95 sixth-grade students (50 girls) who had parental permission and volunteered to participate in the study. At the first testing session

(April 1995) the average age of the students was 11 years, 10 months (range 10 years, 11 months to 13 years). Subjects came from four elementary schools that fed into two junior high schools in Edmonton, Alberta. At the second testing session (September 1995) 75 students were available for follow up. The remaining 20 students were absent on the day of testing, had moved, or were attending other schools that were not accessible for the study. Of the 75 students (41 girls) available at the second testing session, 41 attended school A and 34 attended school B. Because the two junior high schools were in different neighbourhoods and had different organizations, a detailed description of both schools is available in Appendix A.

Finally, at the third testing session (December 1995 and January 1996) 72 students (40 girls) were available for testing, with 38 from school A and 34 from school B. All subjects completed the same questionnaire at each of the three testing sessions.

Procedure

With school board, principals', and teachers' permission, each sixth grade class in four elementary schools was given a short presentation about the study. This presentation included a brief description of the researcher, the purpose of the study, and an outline of what participants were required to do. Parental permission forms were handed out and returned forms were collected by the classroom teachers.

Testing days for the first testing session were coordinated with the teachers and set for approximately two weeks after the class presentations. On the testing day, permission forms were collected from the teachers and the participating students were given the questionnaires to complete. Testing was done during school hours in the classroom or in other quiet areas of the schools (e.g., empty lunchroom, library). There were at least two examiners present during completion of the questionnaires to answer questions or help any students who needed assistance.

The second and third testing sessions were completed similarly to the first session. The only difference was that parental permission forms were not involved because parents gave approval for participation for the entire study at the time of the first testing session. Students completed the questionnaires in approximately 30 to 45 minutes.

Measures

Social Support. Most measures of social support operationalize support as a single concept that may incorporate aspects of emotional, informational, instrumental, and social companionship support (e.g., Vaux et al., 1986). An exception is Dubow and Ullman (1989) who developed the Survey of Children's Social Support to measure three aspects of social support. These areas included an appraisal of family, peer, and teachers support, size and identity of the support network, and actual supportive behaviours (i.e., enacted support) provided to the child (Scale of Available Behaviours or SAB). The appraisal of family, peer and teacher support provides ratings of perceived support from three different sources but does not differentiate the types of support provided. Upon inspection, most items seen to reflect emotional support (e.g., "Do you think your friends care about you?", "Does your family make you feel bad?", "Do you feel very close to your teacher?"), thus it is not considered appropriate for this study.

The SAB, on the other hand, is a measure of three different types of enacted support. Principle components analysis of the SAB revealed three factors for the 38 items (Two items had nearly equal cross factor loadings on two factors and will not be included in this study). These factors are called emotional/informational support, emotional/esteem-enhancing support, and tangible support and represent aspects of informational, emotional, and instrumental support, respectively. The questions do not specify a source of support but ask how often "someone" or "somebody" provides a particular type of support (e.g., "How often does somebody cheer you up when you are sad?"). For the purposes of the present study, these items were modified to specify the source of support as a parent, friend, or teacher. The sample question therefore became three questions: How often does your parent cheer you up when you are sad?, How often does a friend cheer you up when you are sad?, and How often does a teacher cheer you up when you are sad? One other modification was made for this study. Three items loading on the instrumental support factor cannot be modified to represent support from different sources and therefore were deleted from the study (i.e., When you want to play with somebody's new toy or game, how often do they share it with you?, How often do you go on vacations or trips with your family?, and How often are you one of the first chosen for a team?).

The psychometric properties of the SAB were calculated based on a sample of 361 third through fifth grade students. Cronbach's alpha for the SAB was .94 for the total score and .74 to .88 for the subscales. Test-retest reliability after two weeks with a sample of 132 students was .74 for the total scale and .61 to .69 for the subscales. Convergent and discriminant validity was measured by correlating the SAB with other measures. A loneliness scale was moderately correlated with the SAB indicating that children who received fewer supportive behaviours reported being more lonely (r's = -.39 to -.47). The SAB was moderately correlated with the global self-worth and social competence subscales of the Perceived Competence Scale for Children (Harter, 1982) and thus, consistent with Cobb's (1976) notion that social support provides individuals with information that they are cared for and loved by others (r's = .30 to .43). And the SAB was not related to peer nominations of aggression, indicating that the scale was not simply tapping a halo concept reflecting behavioural adjustment or well-being (r's = -.03 to .10; Dubow & Ullman, 1989; also see Dubow & Ullman, 1989 to obtain copies of the SAB).

Unfortunately, the SAB does not include a subscale of social companionship therefore this aspect of social support was measured using the companionship/social integration subscale of the Network of Relationships Inventory (NRI; Furman & Buhrmester, 1985; also see Furman & Buhrmester to obtain copies of the NRI). Children are asked how much the relationship quality (i.e., companionship) occurs in different relationships. For example, "How much free time do you spend with each of these persons?" would be presented with ratings for parents, friends, and teachers on a

5-point Likert scale. The NRI has been shown to have good internal reliability with a mean Cronbach's alpha of .80 (Furman & Buhrmester, 1989).

Social Adjustment. The Relational Provisions Loneliness Questionnaire (RPLQ) was used to assess loneliness within the context of peers (Hayden-Thomson, 1989; also see Hayden-Thomson, 1989 for a complete version of the RPLQ). The RPLQ was designed to measure two conceptual aspects of loneliness within the context of peer and family systems: group integration and personal intimacy. For the purposes of the present study, questions regarding integration and personal intimacy within the context of family were not included. The RPLQ for peers consists of 14 statements with a 5-point rating scale for degree of agreement. Group integration statements focus on the child's perceived integration within a social network (e.g., "I feel part of a group of friends that does things together"). Personal intimacy items relate to a child's perception of having a close friend (e.g., "I have a friend I can tell everything to.")

In an examination of the RPLQ's reliability and validity, 310 third through eighth grade students completed it and a number of other measures. Cronbach's alphas for group integration and personal intimacy with peers indicated high internal consistency (alpha = .87 and .89, respectively). Test-retest reliability was determined by retesting subjects two weeks after the initial assessment. Scores were relatively stable for the peer group integration scale (r (308) = .79, $p < .001$) and the peer intimacy scale (r (308) = .67, $p < .001$). Convergent validity was established by correlating the RPLQ scores with explicit self ratings of loneliness and with a measure of self-concept.

Correlations between these measures and the RPLQ were significant and ranged from .40 to .75 (Hayden-Thomson, 1989).

Emotional Adjustment. Two areas of emotional support were measured: self-worth and state anxiety. Harter's Perceived Competence Scale for Children measures children's self-perceptions on four subscales: cognitive, social, physical, and general (Harter, 1982). The general subscale measures children's views of self which is a measure of general self-esteem. These seven questions are presented as brief descriptions of two different types of children (e.g., "Some kids are very happy being the way they are BUT other kids wish they were different"). Children are instructed to pick the description that best describes them, then to rate the statement as "really true" or "sort of true" for them. This two step process results in a four-point rating with high scores representing high self-worth or self-esteem.

Factorial validity was conducted on a sample of 714 third through sixth grade students. The average loading of items on their designated factors for cognitive, social, physical, and general subscales was .67, .61, .64, .50, respectively. Subscale reliability was conducted based on data from more than 2000 third through ninth grade students. Internal consistency alphas ranged from .73 to .86 for the four subscales. Test-retest reliability from 810 third through ninth grade students after nine months resulted in correlations ranging from .69 to .80 for the four subscales (Harter, 1982; also see Harter, 1982 to obtain copies of her scale).

The State-Trait Anxiety Inventory for Children (STAIC; Speilberger, 1973) was used to measure state anxiety. The STAIC consists of 20 questions asking children how they feel at the time they are completing the questionnaire. Each item has three possible responses and children are asked to choose one (e.g., "I feel... very calm, calm, not calm.") The STAIC is appropriate for children in fourth through sixth grade. Test-retest reliability was computed based on a sample of 246 fourth through sixth grade students over a six-week interval. Because of the situation specific nature of state anxiety the correlations were low (*r* = .31 to .47 for males and females respectively). Given the transitory nature of state anxiety, a more appropriate measure of reliability would be measures of internal consistency. Cronbach's alpha for state anxiety was .82 for males and .87 for females. Construct validity for state anxiety was obtained by having more than 900 fourth through sixth grade students complete the scale under normal conditions and then complete it again according to how they would feel just before a final examination. The latter set of scores was higher than the former with each item significantly discriminating between the two conditions for both sexes. The magnitude of the differences in the two conditions was reflected in point-biserial correlations for scores on each item with the two conditions. These correlations ranged from .29 to .55 (Spielberger, 1973).

Academic Adjustment. Academic adjustment was to be measured using two variables: grades and attendance. Unfortunately, sixth grade students did not receive numerical grades, instead they received anecdotal report cards. To compensate for the lack of grades, students' scores from a standardized measure, the Highest Level of

Achievement Test (HLAT), were collected. These tests were administered by the schools to all students toward the end of sixth grade. These scores provide grade equivalents for reading and writing ability. Writing scores also included a 4-point rating within the grade level. A score of 1 represents limited ability, 2 is adequate, 3 is proficient, and 4 is excellent.

Similar types of measures were used at the seventh grade level. Students at school A received both percentages and ratings on a 4-point scale. A rating of 1 was equivalent to a grade of 0 to 49 percent and meant the student's work did not meet acceptable standards. A 2 was equal to 50 to 64 percent and meant the work met acceptable standards, 3 (65 to 79%) was for work approaching standards of excellence, and 4 (80 to 100%) was for work that met standards of excellence. Students at school B received grade equivalents and a 4-point rating comparable to the system used by school A. These ratings were collected for four core subjects; language arts, social studies, mathematics, and science, for the first term of seventh grade.

The number of days absent during the last term of sixth grade (60 days) and the first term of seventh grade (48 days) were collected from school files. These numbers were converted into percentage of days present for each term.

Stress. Stress is often measured by using checklists of major life events (e.g., Swearington & Cohen, 1985); however, a school transition is considered a major life event for early adolescents. Because all subjects experienced this major event, the measure of stress focused on the daily hassles experienced at school. The Adolescent

Hassles Inventory (AHI) is a 68-item measure of stress developed by modifying the Adult Hassles Scale (Kanner et al., 1981). The AHI deleted items inappropriate for 11- to 13-year old children and age appropriate items were added.

The AHI was completed by 246 sixth-grade students and found to have high internal consistency (Alpha = .93; Bobo, Gilchrist, Elmer, Snow, & Schinke, 1986). One week test-retest reliability also was high (r = .84). Factor analysis revealed eight subscales with the first subscale, school, having an eigenvalue of 10.93. The eight items that had factor loadings greater than .40 on the school subscale were internally consistent (Alpha = .84) and had moderate test-retest reliability (r = .62) despite the changing nature of school hassles. These eight items were used to measure the stress students experience at school (Bobo, et al., 1986).

In addition, a global rating of stress at school was obtained by simply asking students to rate on a 5-point Likert scale how stressful school had been during the past week.

Analyses

The data from each subject was entered on a spread sheet computer package for analysis using the SPSS program. The questionnaire data first were analyzed for reliability. Next the data for each source of support at each test time were subjected to principle components factor analyses to determine whether the 33 modified items loaded onto three components representing three different types of support as Dubow and Ullman (1989) had found. Subsequently, summary score or mean ratings of emotional, informational, and instrumental support were computed for later analyses.

One-way analyses of variance were calculated to compare subjects' ratings based on the elementary school they attended, then sex, and junior high school they were attending. Because the increased number of analyses may lead to a greater risk of Type I errors, the probability level was increased (i.e., a family-wise error rate) to counteract the greater risk of these false positive findings. At each test time, a 3 (source of support) by 4 (type of support) within subjects analysis of variance (ANOVA) was computed to determine whether early adolescents perceived any differences in the type or amount of support they received from parents, friends, or teachers. When necessary, simple main effects, post hoc tests (Tukey's) were calculated to interpret significant effects.

After the third test session, repeated measures ANOVAs were computed to compare each of the dependent variables across the three test sessions. Again, post hoc tests (Tukey's) were used to interpret significant interactions. The second research question asked whether different types of support mediated adjustment in different domains. To address this question, forward stepwise multiple regression analyses were computed. This procedure was used to determine whether different types of support predicted adjustment in the different outcome areas. Measures of social, emotional, and academic adjustment were used as the criteria in separate analyses with sources of support from friends, parents and teachers from either the first or second test session as predictor variables.

Chapter 4

Results

Overview of the Results Chapter

This chapter is divided into four major sections. The first section involves a review of the questionnaires, their validity and reliability. The next section covers an examination of the data obtained at the first test session and a comparison of the results among the schools involved. The third section of this chapter reviews the results from testing session two and compares these findings with those of test session one. The last section similarly examines the results from testing session three and compares these findings with those of the previous two sessions. Complete analysis of variance tables for all findings indicating significant effects are listed in Appendix B. Further, multiple regression tables also are available in Appendix B.

Section One: Questionnaire Data

Data Entry. Data for each questionnaire was coded according to the original specifications. The Perceived Competence Scale for Children was coded 1 through 4 with 1 indicating low self esteem and 4 indicating high self esteem. For example, students checking "sort of true for me" or "really true for me" for the statement "Some kids are pretty sure of themselves" would be scored 3 and 4 respectively. Students checking "really true for me" or "sort of true for me" for the other half of the statement, "Other kids are not very sure of themselves" would be scored 1 and 2 respectively (Harter, 1982).

The Scale of Available Behavior (SAB) was scored according to the number the students circled (1 referring to "always" and 5 referring to "never"). The Network of Relationships Inventory (NRI) was reverse coded to concur with the SAB, that is, the lower the number the greater the rating of support. The Relational Provisions Loneliness Questionnaire (RPLQ) was scored a 1 through 5 with 5 indicating low levels of loneliness and 1 indicating high ratings of loneliness. The State/Trait Anxiety Inventory for Children (STAIC) was scored using the specifications set out by Spielberger (1973). The numbers 1 through 3 were used with the higher numbers indicating greater ratings of anxiety. The Adolescent Hassles Inventory (AHI) was scored using the numbers presented in the questionnaire. A zero indicated no hassles and 1 through 3 represented hassles of increasing severity. Stress at school was rated on a 5-point Likert-type scale with 1 indicating the greatest stress and 5 indicating the lowest stress.

Because percentage scores were not available for the achievement data, this information was coded in two different ways. Sixth grade reading achievement scores were simply coded by the grade level achieved (range 5 through 8). Sixth grade writing scores and seventh grade scores for language arts, social studies, mathematics, and science were coded 1 to 4 based on the within grade rating. There were however, six subjects whose scores on the writing test were not at the sixth grade level and one subject whose language arts score was not at the seventh grade level. Using the 1 to 4 coding system, these scores were treated as missing data. However, to include them a second coding system was used. The numbers 1 to 28 represented four levels within each grade from first through seventh grade. For example, a grade one level 4 score would be coded 4, a grade two level 1 score would be coded 5, and a grade seven level 2 would be coded 26.

Questionnaire Data. Reliability analyses were computed for each of the questionnaire measures used at each test session. The alpha scores ranged from .68 to .96. The alpha scores for each of the questionnaires are presented in Table 1. In general, the ratings indicated good reliability.

Dubow and Ullman (1989) used a principle components analysis on SAB data from 361 third through fifth grade students and found items loaded onto three factors representing emotional, informational, and instrumental support. In the present study, the original rating profile was changed from one representing a general source of support to three representing support from parents, peers, and teachers. Principle components factor analyses with varimax rotations were computed to determine whether the 33 modified items also loaded onto three factors for each source of support at each of the three test sessions. Across the nine principal component analyses (3 sources of support X 3 test sessions) the modified SAB loaded onto 5 to 8 factors. Table 2 lists the items with loadings greater than .50, the type of support the item measures, the eigenvalues, the percentage of variance accounted for, and the cumulative percentage of variance accounted for with modified SAB ratings for friends from test session one.

Table 1

Range of Alpha Scores for Questionnaire Measures

Measure	Alpha Scores
Adolescent Hassles Inventory	.86 - .93
Network of Relationships Inventory	
-Friends	.76 - .79
-Parents	.82 - .85
-Teachers	.68 - .77
Perceived Competence Scale	.72 - .81
Relational Provisions Loneliness Questionnaire	.90 - .94
Modified Scale of Available Behaviors	
-Friends	.95
-Parents	.94 - .96
-Teachers	.94 - .96
State-Trait Anxiety Inventory for Children	.79 - .88

This example indicates the tendency of the items to cluster according to the type of support measured (i.e., emotional, informational, instrumental). There are however, a number of informational items that cluster with items measuring emotional support. This tendency to overlap was seen on all the principal component analyses. It should be noted however, that in the present study only 95 subjects completed the modified SAB compared to Dubow and Ullman's sample of 361. Statistically the correlation coefficients that were factor analyzed are therefore less reliable than the ones in Dubow and Ullman's analysis. A larger sample of students may have made the analysis more reliable and the results more similar to those of Dubow and Ullman's findings.

In light of this point, the students' mean ratings for emotional, informational, and instrumental support from the three sources were used for subsequent analyses. Interpretations and conclusions were made cautiously, however, since these mean ratings may not represent pure measures of three different types of support.

Section Two: First Test Session Data

Demographics. As indicated above, 95 sixth-grade students (50 girls) participated in the first test session. At that time, mean age of the students was 141.87 months or approximately 11 years, 10 months (range 131 to 156 months). From16 to 35 students participated from each of the four elementary schools involved in the study (see Table 3). Schools A1 and A2 fed into junior high school A and schools B1 and B2 fed into school B.

One way analyses of variance (ANOVAs) were computed to compare the four

Table 2

Factor Item Loadings (Greater than .50), Type of Support the Item Measures, Eigenvalues, Percentage of Variance Accounted for and Cumulative Variance for the Modified Scale of Available Behavior Ratings for Friends from the First Test Session

Factor	Items	Type of Support Item Measures	Eigen-values	Percentage of Variance Accounted for	Cumulative Variance
1	5 = .51	Informational	13.52	41.0	41.0
	11 = .55	Informational			
	13 = .81	Informational			
	23 = .66	Informational			
	24 = .59	Emotional			
	25 = .66	Emotional			
	26 = .60	Emotional			
	27 = .51	Emotional			
	28 = .72	Emotional			
	29 = .57	Emotional			
	31 = .64	Emotional			
	32 = .72	Emotional			
	33 = .79	Emotional			
2	1 = .68	Informational	1.95	5.9	46.9
	8 = .81	Informational			
	18 = .65	Informational			
3	1 = .68	Informational	1.54	4.7	51.6
	2 = .77	Informational			
	3 = .61	Informational			
	11 = .53	Informational			
4	6 = .59	Instrumental	1.47	4.5	56.0
	10 = .73	Instrumental			
	14 = .65	Instrumental			
	15 = .69	Instrumental			
5	4 = .75	Informational	1.38	4.2	60.2
	16 = .53	Informational			
	21 = .65	Emotional			
6	9 = .67	Informational	1.18	3.6	63.8
7	22 = .81	Instrumental	1.08	3.3	67.1
8	30 = .77	Emotional	1.05	3.2	70.3

schools on each of the dependent variables (see Table 4). Using a probability level corrected for a family wise error rate, three variables were found to be significantly different. Students' ratings for social companionship support from parents differed significantly among the four schools ($F(3,91) = 7.27$, $p < .002$; see Appendix B, Table 1). Student Newman-Keuls post hoc analyses revealed school A2 scored significantly lower than schools B1 and A1 and school B2 scored significantly lower than school B1. In other words, students at school A2 rated their parents as spending more time with them in fun activities than did students at schools B1 and A1. Similarly, students at school B2 rated their parents as spending more time with them than students at school B1.

The second variable that indicated significant differences among the four schools were students' ratings of their friends' emotional support ($F(3,88) = 6.16$, $p < .002$; see Appendix B, Table 2). Student Newman-Keuls post-hoc analyses revealed students at school A1 rated their friends as providing significantly less emotional support than students at the other three schools.

And on students' ratings of the instrumental support provided by parents ($F(3,90) = 5.60$, $p < .002$; see Appendix B, Table 3), post hoc analyses revealed that students at school A2 rated their parents as providing more instrumental support than students at schools B1 and A1.

These findings indicate that there were some differences among the students' ratings of friends and parents at the four different elementary schools. The question then arose

Table 3

Number of Subjects and Number of Boys and Girls by Elementary School

School	Number of Subjects	Girls	Boys
A1	26	10	16
A2	16	14	2
B1	35	16	19
B2	18	10	8
Total	95	50	45

as to whether the students entering junior high school A were in some ways significantly different from students who were entering junior high school B. To investigate this possibility, one way ANOVAs were computed for each of the dependent variables comparing the students intended for junior high school A (i.e., schools A1 and A2) and those entering school B (i.e., B1 and B2). Again, the probability level was corrected for a family wise error rate, and none of the 19 comparisons revealed a significant difference between students headed for school A and those going to school B (Fs = .04 to 4.03, p = .05 to .84). Therefore, despite some differences among the elementary schools, there were no significant differences among the students' ratings based on the junior high schools to which they were going.

Sex Differences. Because children at this age have been shown to experience gender differences in their friendships, one way ANOVAs were computed to compare girls' and boys' ratings on the dependent variables. Three comparisons were found to be significant when the probability level was corrected for a family-wise error rate. On the personal intimacy scale of the RPLQ girls rated their friendships significantly higher than did boys (F (1,92) = 12.12, $p < .002$; see Appendix B, Table 4). That is, girls rated themselves as having a close friend more than boys did (means = 4.46 and 3.99, respectively). This finding is consistent with research showing girls' friendships to be more intimate than boys' friendships (Berndt & Perry, 1990).

The second and third variable on which boys and girls differed were their ratings of emotional and informational support from friends (F (1, 92) = 12.46 and 11.60,

Table 4

Means and Standard Deviations for Each Dependent Variable at Each Test Session

	Test Session					
	First		Second		Third	
Variable	M	SD	M	SD	M	SD
Perceived Competence	3.16	.56	3.10	.60	3.08	.60
Adolescent Hassles	.80	.80	.74	.88	.82	.75
State Anxiety	1.40	.27	1.45	.29	1.43	.27
Stress	3.61	1.05	3.41	1.20	3.33	1.20
Total Loneliness	4.14	.60	3.99	.74	4.14	.73
Group Integration	4.03	.63	3.89	.73	4.04	.76
Personal Intimacy	4.24	.69	4.09	.83	4.25	.81
Friends Support						
Social	1.99	.79	1.92	.81	1.81	.75
Informational	2.24	.67	2.37	.74	2.29	.68
Emotional	2.16	.73	2.42	.78	2.29	.72
Instrumental	3.16	.78	3.14	.82	3.02	.76
Parents Support						
Social	2.14	.90	2.25	.93	2.00	.94
Informational	1.87	.63	2.06	.80	1.96	.66
Emotional	1.88	.67	2.12	.80	2.00	.69
Instrumental	2.60	.61	2.74	.63	2.62	.63
Teachers Support						
Social	3.96	.72	4.30	.76	4.18	.85
Informational	2.34	.73	2.85	.81	2.96	.89
Emotional	2.64	.74	3.13	.87	3.27	.88
Instrumental	4.01	.58	4.15	.80	4.17	.72

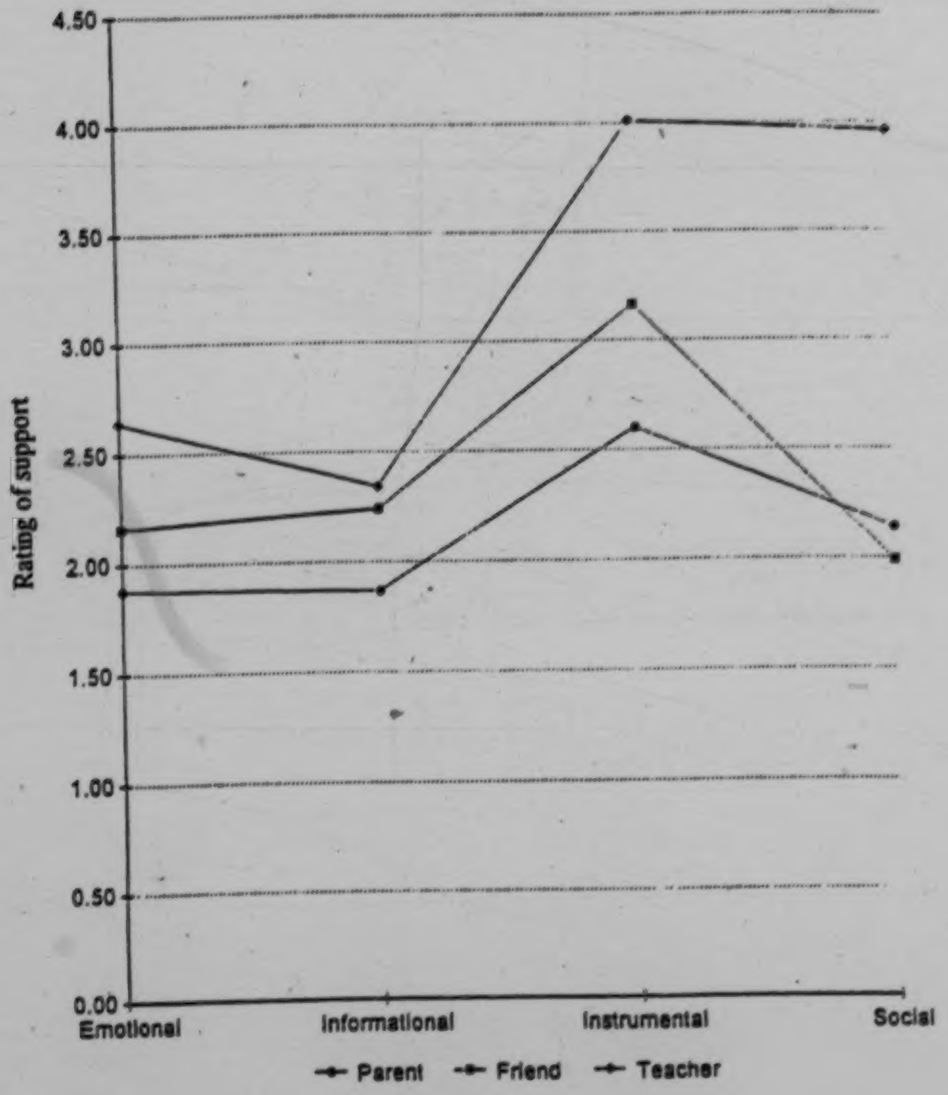
respectively, $p < .002$; see Appendix B, Tables 5 and 6 respectively). On both these variables, girls' ratings reflected greater perceived emotional and informational support from their friends than did boys (emotional support means = 1.92 and 2.43; informational support means = 2.04 and 2.48, respectively). Thus, the level of intimacy in girls' friendships does appear to be higher than in boys' friendships. It is important to note that boys and girls did not differ, however, on their ratings of teacher or parent support. This finding indicates that despite the greater intimacy with their friends, girls still perceive as much support from their parents and teachers as boys. Likewise, boys get less intimacy from their friends at this age than do girls but they do not appear to need more support from their parents and teachers to compensate for this lower level of intimate support from friends.

Research Question One: Differences in Type and Amount of Support Received.

The first research question of this study asked whether students perceived any differences in the type or amount of support they received from friends, parents, and teachers. To answer this question for the first test session, a 3 (source of support) by 4 (type of support) within subjects ANOVA was computed. The mean scores of these ratings are plotted in Figure 1. Main effects were significant for the type of support (F (3, 252) = 196.54, $p < .001$), and source of support (F (2, 168) = 128.83, $p < .001$). Their interaction also was significant (F (6, 504) = 74.82, $p < .001$; see Appendix B, Table 7).

To better understand this 3 X 4 interaction, simple main effects tests were

Figure 1. Students' ratings of four types of support from parents, friends and teachers at the first test session, spring of sixth grade.



Note. Lower scores represent higher ratings of support.

computed. First, the differences among the four types of support parents provide was examined. The perceived amount of instrumental support provided by parents was significantly less than the emotional or informational support provided (q (4, 168) = .46, $p < .01$). Comparing ratings of teachers' support revealed significantly less instrumental and social companionship support than informational or emotional support. That is, students perceived their teachers as providing more emotional and informational support than instrumental or social companionship support. And students rated their peers as providing less instrumental support than any of the other three types of support (informational, social companionship, and emotional support).

Comparing parents, peers and teachers on each type of support revealed fairly consistent results. Again, test of simple main effects were computed and for emotional support parents were rated as providing significantly more support than peers who provided significantly more support than teachers (q (3, 252) = .26, $p < .01$). An identical pattern of results was found for instrumental support with parents providing the most, then peers, and then teachers, the least amount of support. For informational support parents again were rated as providing significantly more support than friends or teachers but there were no significant difference between the amount of informational support peers and teachers provided. Finally, for social companionship support, parents and friends were rated as providing significantly more support than teachers. Parents and friends did not differ however on the amount of social companionship support they provided.

The answer to the first research question for this first phase of the study was yes, there were differences in the type and amount of support teachers, parents and friends provided. In general, parents and teachers provided more emotional and informational support than instrumental or social companionship support, and friends provided less instrumental support than the other three types of support. Parents were seen as providing more support generally than friends and teachers except for social companionship where they were not different from friends. Peers were perceived as providing more support than teachers except for informational support where there was no difference.

Attendance and GPA data for Test Session One. Attendance data were available for 94 of the subjects and indicated a range of 0 to 23 days absent for the third term of sixth grade (60 days). The mean number of days absent was 2.63 (standard deviation = 3.76) or students were present, on average, 95.62 % of the time. One way ANOVAs were computed to compare the attendance data from the four elementary schools. The results indicated a significant difference in the number of days absent among the four schools (F (3, 90) = 3.11, $p < .03$; see Appendix B, Table 8) however Scheffe post hoc analyses revealed no two groups were significantly different at the .05 level. Comparing the students' attendance data based on the junior high school they were going to (F (1,92) = 3.58, $p = .06$) and by sex (F (1,92) = 0.49, $p = .49$) revealed no significant differences.

The Highest Level of Achievement Test (HLAT) scores for reading ranged from 5 to 8 with a mean of 6.13 (standard deviation = 0.61). The reading scores were available from only three of the four elementary school ($n = 77$). One way ANOVAs revealed no significant differences for reading scores based on groupings of elementary school (F (2,74) = 0.12, p >.05), junior high school (F (1, 75) = 0.25, p > .05), or sex (F (1,75) = 0.88, p > .05).

The HLAT scores for writing were obtained from all 95 subjects and ranged from 4-1 to 6-4. Recalculated using the 1 to 28 coding system revealed a mean of 22.29 (approximately 6-2, standard deviation = 1.80, range 13 to 24). A one way ANOVA comparing elementary schools resulted in a significant difference in writing scores (F (3, 91) = 3.23, p < .03; see Appendix B, Table 9) but Scheffe post hoc analyses indicated no significant differences between schools at the .05 level. Similar comparisons based on groupings of junior high school and sex indicated no significant differences (F (1,92) = 1.71, p = .19 and F (1,92) = 2.32, p = .13, respectively). In summary, there were no significant differences in attendance, reading or writing achievement scores between the students going to junior high school A or B nor were any sex differences found on these variables.

Section Three: Second Test Session Data

Demographics. Of the initial 95 students who participated in the spring of their sixth grade year, 75 were available for follow up in the second week of school in the fall of their seventh grade year (approximately 4.5 months later). Of these students, 41 (54.7%) attended school A and 34 (45.3%) attended school B. More students were lost from the feeder school B1 and B2 because there was greater flexibility in attending non neighbourhood schools in this area as compared to school A. Of the 41 subjects from school A 23 were girls and 18 of the 34 students from school B were girls.

To ensure that there were no systematic differences between the students that were not available for follow up at the second test session and those that were, one way ANOVAs were computed to compare these two groups' scores on the dependent variables from the first test session. None of the analyses revealed any significant differences (Fs = .002 to 2.30, ps = .13 to .97). It was concluded that the subjects who were not available for the second test session were not significantly different from the other subjects on any of the dependent variables measured. The data from these unavailable students was therefore included in subsequent analyses using the first test session information.

One way ANOVAs were computed to determine if the two junior high schools varied on any of the dependent variables measured at the second test session. Consistent with the first test session, a family wise error rate was used and no significant differences were found for any of the dependent variables (Fs < 5.93, ps > .017). These results are consistent with the first test session findings indicating that students planning to attend or attending school A and B did not rate any of the dependent variables differently (see Table 4 for a list of dependent variable means and standard deviations).

Sex Differences. Girls' and boys' ratings on the dependent variables were compared using one way ANOVAs and a probability level corrected for a family wise error rate. Three comparisons were found to be significant. The first significant comparison was on the rating of informational support from friends (F (1,73) = 11.11, p < .001; see Appendix B, Table 10). Girls rated their friends as providing more informational support than the boys' ratings of their friends (means = 2.12 and 2.66, respectively). Informational support is considered intimacy in friendships therefore these findings would be consistent with gender differences research that shows adolescent girls' friendships to be more intimate than boys' friendships (e.g., Berndt & Perry, 1990).

Two other sex differences were found on RPLQ ratings of personal intimacy or having a close friend (F (1,73) = 15.40, p < .001; see Appendix B, Table 11) as well as total RPLQ ratings of loneliness (F (1,73) = 11.27, p < .002; see Appendix B, Table 12). For both of these measures girls rated themselves as less lonely with respect to intimate friends and less lonely overall than did boys (intimacy means = 4.40 and 3.70, respectively' total loneliness means = 4.23 and 3.69, respectively). These sex differences are very similar to those found at the first test session and reflect the greater intimacy found in adolescent girls' friendships than adolescent boys' friendships.

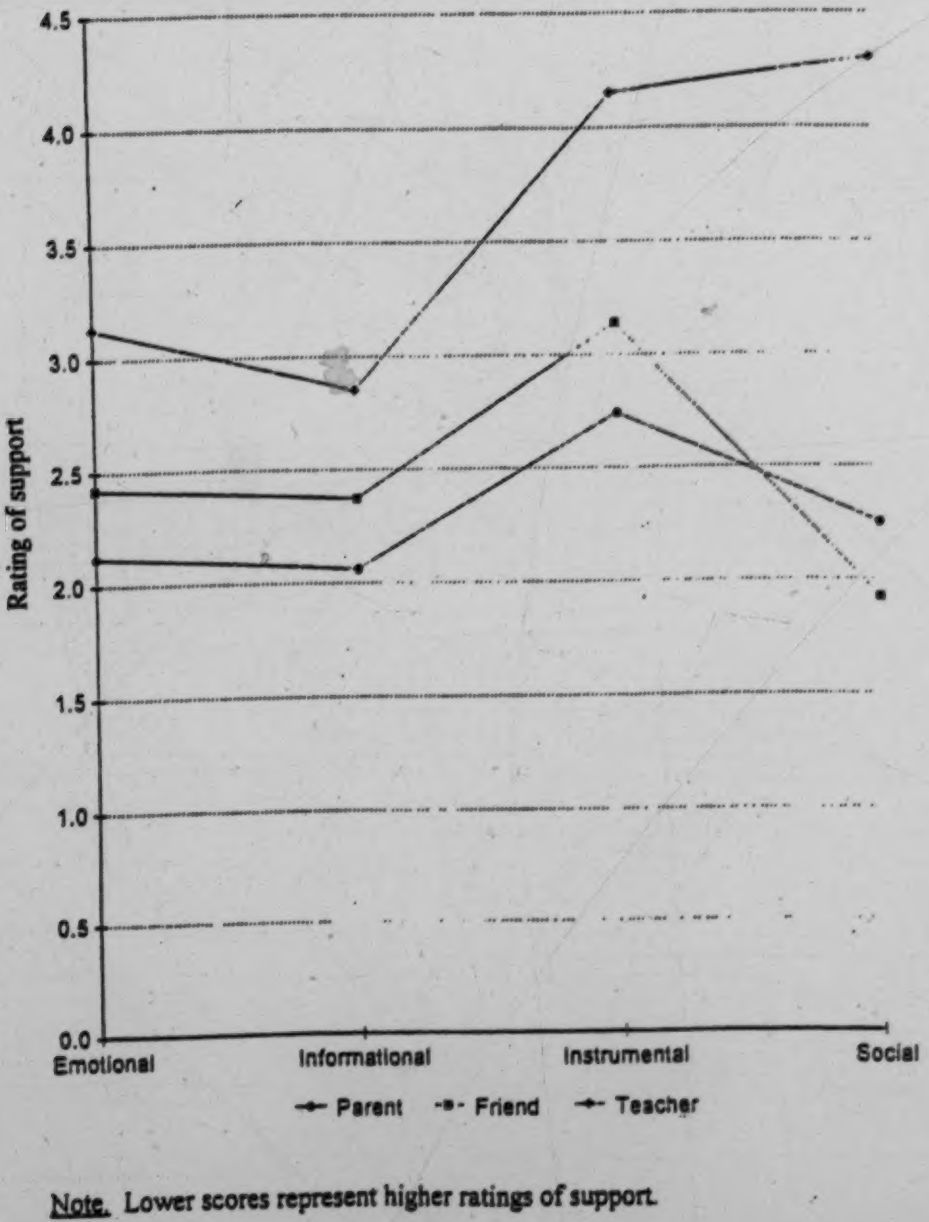
Comparison of the First and Second Test Session Data. To examine the differences between scores on the dependent variables at test time one and two, t-tests were conducted with an adjusted level of probability to correct for a family-wise error rate. Six comparisons were significant and four of these comparisons involved ratings of teachers. Students at the beginning of seventh grade rated teachers as providing significantly less social companionship than when they were in sixth grade (t (73) = -3.96, $p < .001$). Students also rated teachers at the second test session as providing less emotional, informational, and total social support than at the first test session (ts (74) = -5.09, -5.15, -5.04, ps < .001, respectively). Thus students rated their teachers at the beginning of seventh grade as generally less supportive than their sixth grade teachers.

The other two significant differences between the first and second test session involved students' ratings of support from their parents. When students were in sixth grade they rated their parents as providing more emotional and total support than when they were starting seventh grade (ts (74) = -3.27 and -3.44, ps < .002, respectively).

Research Question One: Differences in Type and Amount of Support Received. As with the first test session data, a 3 (source of support) by 4 (type of support) within subjects ANOVA was completed to examine differences in the types and amount of support students rated from parents, friends, and teachers (see Table 4 for mean scores; scores are plotted in Figure 2). Main effects for source (F (2, 144) = 132.17, $p < .001$) and type of support (F (3, 216) = 79.57, $p < .001$) were significant as was their interaction (F (6, 432) = 59.30, $p < .001$; see Appendix B, Table 13). This two-way interaction was further analyzed by using tests of simple main effects.

First, the differences among the types of support parents provide were examined. Instrumental support from parents was rated as significantly less than the emotional or

Figure 2. Students' ratings of four types of support from parents, friends and teachers at the second test session, fall of seventh grade.



Note. Lower scores represent higher ratings of support.

informational support they provided (q (4,144) = 0.53, $p < .01$). Teachers were rated as providing significantly more emotional and informational support than instrumental or social companionship support. And friends were rated as providing significantly less instrumental support than any of the other three types of support measured (i.e., informational, emotional, social companionship). These results are the same as those from the first test session.

Examining the source of support (parents, friends, teachers) at each type of support indicated consistent findings. Teachers were rated as providing significantly less emotional and informational support than parents or friends but there was no significant difference between ratings for these two types of support from parents or friends. Parents provided significantly more instrumental support than friends who provided significantly more instrumental support than teachers. And friends were rated significantly greater than parents who were rated significantly greater than teachers at providing social companionship support.

To summarize, at the second test session, students did perceive differences in the type and amount of support parents, friends and teachers provided. Parents and teachers were perceived to provide more informational and emotional support than other types and friends provided more informational, emotional and social companionship support than instrumental support. Parents and friends were rated as providing more emotional and informational support than teachers. And parents were rated as the greatest providers of instrumental support whereas friends provided the most social companionship support.

Section Four: Third Test Session Data

Demographics. At the third test session, 72 subjects were available for follow up. This third test session took place in December and January of the students' seventh grade year. Thirty-eight subjects (52.8%) attended school A and 34 were from school B (47.2%). A total of 40 girls (55.6%) participated with 22 girls from school A and 18 from school B.

Because of scheduling problems, 14 students from school B completed the questionnaires for the third time in December (approximately three months after the second test session) and 20 students completed the study in January (approximately 4 months after the second test session). To determine whether there was any significant difference between the students at school B tested in December versus January, a series of t-tests were completed to compare the two groups on all variables measured at the third test session. Using a probability level adjusted for a family-wise error rate, no significant differences were found (ts = -2.01 to 2.45, ps > .02). Thus, the students' scores were combined to represent the third test session data.

One way ANOVAs were computed to determine if there were any differences between the two junior high schools based on the dependent variables measured at the third test session. Again, using a corrected probability level, one factor was found to be significant ($F(1,73) = 10.85$, $p < .002$; see Appendix B, Table 14). The average grade for all four course grades obtained at the end of the first term of seventh grade indicated school A's scores were significantly greater than those of school B's (mean scores = 27.28 and 26.76, respectively).

Attendance and GPA Data. Attendance data was available for all 75 subjects tested at the junior high school level and indicated a range of 0 to 8 days absent for the first term of seventh grade (48 days). Students were absent a mean of 1.1 days or present 97.68% (standard deviation = 3.57) of the time. Grades for four core subjects were obtained for all the subjects at the junior high schools. Based on the 1 to 28 scoring system students' mean grades were as follows: Language Arts was 26.91 (standard deviation = .96, approximately 7-3, range 22 to 28); Science was 27.05 (standard deviation = .80, approximately 7-3, range 25 - 28); Social Studies was 27.09 (standard deviation = .82, approximately 7-3, range 25 - 28); and Mathematics was 27.13 (standard deviation = .91, approximately 7-3, range 25 - 28).

Sex Differences. Girls' and boys' ratings on the dependent variables measured at the third test session were compared using one way ANOVAs with corrected probability levels. Only one comparison was found to be significant, a measure of personal intimacy with friends (F (1,70) = 16.30, $p < .0001$; see Appendix B, Table 15). Girls rated their friendships as significantly more intimate than boys did (means = 4.56 and 3.86, respectively). This finding supports the greater intimacy perceived in adolescent girls' friendships as compared to boys' friendships.

Comparison of the First, Second, and Third Test Session Data. To compare each of the dependent variables across the three testing sessions, repeated measures ANOVAs were computed with a corrected probability level for a family wise error rate (see Table 4 for a list of means and standard deviations.) Four measures were found to be significantly different at the three test sessions and all related to ratings of teacher support. The teacher ratings for emotional and informational support as well as a composite measure of all three types of support on the modified SAB were significant (Fs (2,140) > 21.85, $p < .001$; see Appendix B, Tables 16 to 18 respectively). On all three comparisons post hoc tests indicated that the students' ratings of teacher support were significantly greater at the first test session than either at the second or third session (q (3,140) > 2.49, $p = .01$). That is, students rated their sixth grade teachers as providing more emotional, informational, and total support than their seventh grade teachers either at the beginning of the school year or later in the semester.

The fourth comparison also involved ratings of teachers' support, their social companionship support (F (2,134) = 6.66, $p < .002$; see Appendix B, Table 19). Students' rated their sixth grade teachers as providing significantly more social companionship support than their seventh grade teachers after the first two weeks of school (q (3,134) = .33, $p < .01$). There were no significant differences between the ratings at the third test session and those of the first and second session. These results are consistent with the findings from the t-test done after the second test session.

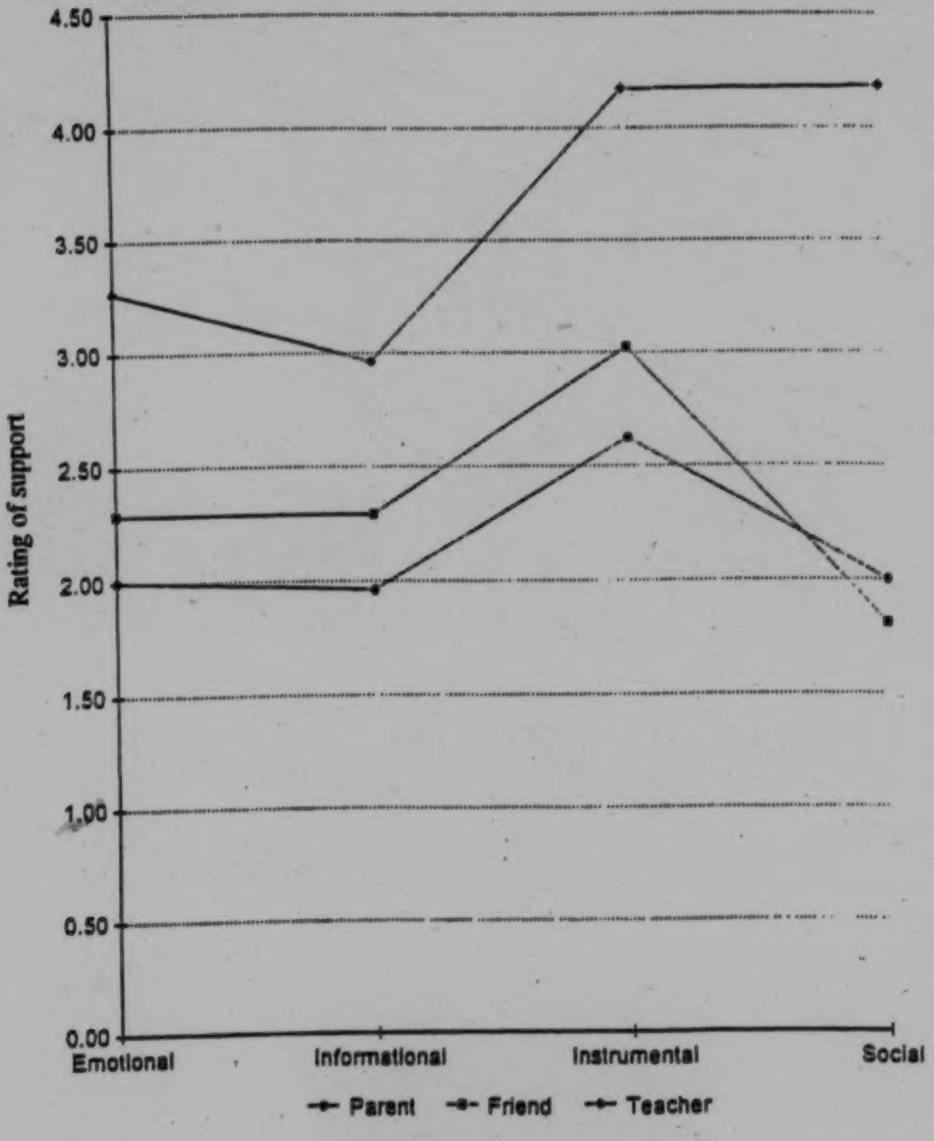
To summarize, students tended to rate their teachers as more supportive when in sixth grade than in seventh grade. Intuitively, these findings are not surprising given that in sixth grade the students had known their teachers for at least eight months compared to a few weeks and a few months at the seventh grade test times. Further, with more teachers and less time spent with each, seventh grade students may be less familiar with their teachers and therefore less likely to experience different types of support from them.

Research Question One: Differences in Type and Amount of Support Received. A 3 (source of support) by 4 (type of support) within subjects ANOVA was computed to determine whether there was any difference in the type or amount of support students rated from their parents, friends or teachers. Main effects for source (F (2,132) = 184.81, $p < .001$) and type of support (F (3, 198) = 63.81, $p < .001$) were significant as was their interaction (F (6, 396) = 40.60, $p < .001$; see Appendix B, Table 20). To break down the interaction and examine the differences at each level of source and type of support, simple main effects tests were conducted (see Figure 3 for a graphic display of these means).

Looking at the types of support parents provided, indicated that students rated their parents as providing significantly less instrumental support than any other type (q (4,132) = .54, $p = .01$). Similar analyses with friends indicated the same result, instrumental support from peers was significantly less than the other three types of support. For teachers, there was no difference in the amount of social companionship, and instrumental support they were rated as providing but both were rated as significantly lower than emotional or informational support.

Comparing teachers, parents and friends on each type of support indicated fairly

Figure 3. Students' ratings of four types of support from parents, friends and teachers at the third test session, winter of seventh grade.



Note. Lower scores represent higher ratings of support.

consistent findings. Parents and friends were rated as providing significantly more emotional, informational, and social companionship support than teachers (q (3, 198) = .35, p = .01). And on instrumental support, parents provided significantly more than peers who provided significantly more instrumental support than teachers.

Thus students again perceived differences in the type and amount of support their teachers, parents, and friends provided. All three sources provided significantly less instrumental support than the other types with the exception of teachers who did not provide significantly more social companionship support than instrumental support. Parents and friends provided more support than teachers across all four types of support. And parents and friends differed only on instrumental support with parents providing significantly more than friends.

Research Question Two: Do Different Types of Support Predict Adjustment? The second research question asked whether different types of support mediated adjustment in different domains (i.e., academic, social, emotional). It was hypothesized that social companionship support from peers would predict social adjustment and that emotional support from parents and peers would predict emotional and academic adjustment following a transition to junior high school.

Social Adjustment. To address this question and these hypotheses, forward, stepwise multiple regression analyses were computed. The first dependent variable or criterion examined was social adjustment. This variable was measured using the RPLQ and yielded three variables: group integration, personal intimacy, and a total loneliness score.

Using the total loneliness score from the third test session, only one of the 12 support measures from the first test session (3 sources of support by 4 types of support) significantly predicted any of the variance in the loneliness score: informational support from friends ($F = 33.11$, $p < .05$, r-squared = .33). The r-squared indicated that 33% of the variance in the loneliness score was accounted for by friends' informational support. No other predictor variable was entered into the analysis (see Appendix B, Table 21).

Using the three social companionship support measures from the first test session (i.e., from parents, peers, and teachers) indicated social companionship support from parents significantly predicted any variance in total loneliness scores from test session three ($F = 4.36$, $p < .05$, r-squared = .06). Only 6% of the criterion's variance however was accounted for by the predictor (see Appendix B, Table 22).

A third analysis was computed using the 12 support measures from the second test session as predictors of loneliness. Emotional support from friends was the only predictor to significantly account for any variance in the loneliness score ($F = 18.79$, $p < .05$, r-squared = .21; see Appendix B, Table 23).

Similar analyses were done with the loneliness score for personal intimacy. Of 12 support measures, informational support from friends in sixth grade predicted personal intimacy midway through seventh grade accounting for 39 % of the variance ($F = 42.67$, $p < .05$, r-squared = .39; see Appendix B, Table 24). Examining just the social support from parents, friends, and teachers at the first test session, teachers' support was the only variable to significantly predict personal intimacy at the third test session ($F = 6.34$, $p < .05$, r-squared = .08; see Appendix B, Table 25).

And using the 12 support measures from the second test session, two variables were found to predict personal intimacy at the third test session: informational support from friends ($F = 16.07$, $p < .05$, r-squared = .19), and instrumental support from teachers ($F = 10.81$, $p < .05$, r-squared = .05) with both variables accounting for a total of 24% of the variance (see Appendix B, Table 26).

Friends' informational support from sixth grade significantly predicted variance in the third test session measure of group integration ($F = 16.42$, $p < .05$, r-squared = .19; see Appendix B, Table 27). Friends' emotional support from the second test session predicted test time three group integration scores ($F = 17.89$, $p < .05$, r-squared = .21; see Appendix B, Table 28). Using only the social companionship support measures from the first test session did not significantly predict the third session group integration scores.

In summary, although social companionship support from peers was hypothesized to predict social adjustment, this premise was not found. Other types of support from peers were found to be better predictors of social adjustment than social companionship such as informational and emotional support. Of just the social companionship support measures only parents' support in sixth grade was found to predict total loneliness in seventh grade but this measure accounted for a small portion of variance (6%) as did teachers' support (8%) predicting personal intimacy. Thus it would appear that informational and emotional support from friends were the major predictors of social adjustment for seventh grade students.

Emotional Adjustment. Two different variables were measured for emotional support: self worth and state anxiety. Using self worth from the third test session as the criterion variable, the 12 support measures from the first test session were included in a forward stepwise multiple regression analysis. The only variable that was entered into the equation was parents' informational support ($F = 7.79$, $p < .05$, r-squared = .11) accounting for 11% of the variance in the self worth scores (see Appendix B, Table 29). Using just the three emotional support measures from the first test session revealed only friends' emotional support as a significant predictor of self worth ($F = 8.85$, $p < .05$, r-squared = .12; see Appendix B, Table 30). When the 12 support measures from the second test session were used as the predictors, only informational support from friends significantly predicted self worth ($F = 7.01$, $p < .05$, r-squared = .10; see Appendix B, Table 31).

The second measure of emotional adjustment was state anxiety. Of the 12 support measures from the first test session, only informational support from teachers significantly predicted state anxiety at the third test session ($F = 7.38$, $p < .05$, r-squared = .10) accounting for only 10% of the variance (see Appendix B, Table 32). Using the same predictors from the second test session, two variables predicted state anxiety: informational support from friends ($F = 6.59$, $p < .05$, r-squared = .09) and instrumental support from friends ($F = 9.87$, $p < .05$, r-squared = .14) with the two measures of support from friends accounting for a total of 23% of the variance (see Appendix B, Table 33). To test the hypothesis that emotional support from parents and friends would predict emotional adjustment, the three emotional support measures from the first test session were used in the analysis and teachers' support was the only significant predictor accounting for only 6% of the variance ($F = 4.32$, $p < .05$, r-squared = .06; see Appendix B, Table 34).

The hypothesis that emotional support from parents and friends would predict emotional adjustment was supported only when the three emotional support measures were entered to predict self worth. In that analysis, support from friends predicted self worth. Generally, support from friends was the most common predictor of emotional adjustment with teachers' support predicting a small proportion of the variance in state anxiety and parents' informational support predicting a small amount of the variance in the self worth measures.

Academic Adjustment. Academic adjustment was measured using both attendance data and marks from the first term of seventh grade. Using attendance data from seventh grade as the criterion, none of the measures of support from either the first or second test session significantly predicted any of the variance in attendance. In other words, support from parents, friends, and teachers in sixth grade and the beginning of seventh grade was not significantly related to attendance in the first term of seventh grade.

A composite measure of achievement based on students' grades in four core subjects (Language Arts, Mathematics, Social Studies, Science) was the criterion for the second measure of academic adjustment. Unfortunately, the two junior high schools differed significantly on this measure with junior high school A scoring significantly higher than school B. To run separate multiple regression analyses on each junior high school would seriously compromise the validity of the test given the much smaller sample sizes. Given the large degree of similarity between the two schools on all other variables measured, the two schools were combined for the following analyses. Of the 12 support measures from the first test session, only instrumental support from teachers significantly predicted achievement in the first term of seventh grade ($F = 7.59$, $p < .05$, r-squared = .10) accounting for 10% of its variance (see Appendix B, Table 35). None of the support measures from the second test session significantly predicted achievement, not did any of the emotional support measures when they were entered by themselves. In summary, support measures were not good predictors of academic adjustment when measured by attendance and achievement.

Chapter 5

Discussion

Overview

There were two main purposes for this study. The first purpose was to determine whether students perceived any differences in the type or amount of support parents, friends, and teachers provided as they made the transition from elementary to junior high school. The second purpose was to evaluate whether different types of support mediated adjustment to junior high school in different domains specifically, academic, social and emotional adjustment. In this section I will examine each purpose and related hypotheses, results and issues. I also will examine the different approaches the two participating junior high schools used to facilitate the transition from elementary to junior high school and the implications of the study's findings on these approaches.

Research Question One: Differences in Type and Amount of Support Received

It was hypothesized that parents would be perceived as providing the most emotional support and instrumental support for early adolescents. Social companionship support was predicted to be perceived as the most common type of support from peers and instrumental support most common from teachers.

The majority of these predictions were supported at each test session. Parents did provide more emotional support than did friends and teachers at the first test session. By the second and third sessions however, friends were ranked as providing amounts of emotional support that were not significantly different from parents. Although instrumental support was not a type of support that parents were perceived as providing a great deal of compared to the other types of support they gave, they were seen as providing more instrumental support than friends or teachers at each of the three test sessions.

Friends were rated as providing the most social companionship support at the second test session but did not differ from parents on this variable at either the first or third test sessions. The third component of the hypothesis was not supported by the results. Teachers consistently were rated as providing significantly more emotional and informational support to their students than instrumental and social companionship support. Further, students rated their friends and parents as providing significantly more instrumental support than teachers at all three test sessions.

There are a number of possible explanations and issues related to these findings based on psychometric issues, developmental changes in the roles of parents and friends to early adolescents, the change in teachers, sex differences, and students' perception of the different types of support. Each issue will be discussed in turn.

Measures. As indicated earlier, the measure used for emotional, informational, and instrumental support did not load clearly onto three different factors in the principle components factor analyses. While there was a tendency to cluster according to the type of support measured, there was a certain amount of overlap between the different types of support, especially informational and emotional support. This finding limits the degree to which generalizations about the different types of support can be made.

There are two approaches that may be used to address this problem of measurement. The first approach is to increase the number of students in the study to more closely match the numbers participating in Dubow and Ullman's study (1989). It is possible that with a larger sample variations in the present findings would be eliminated and the factor loadings would be more stable (Pedhazar, 1982).

Alternatively, the questions that make up the SAB may be appropriate for students when no specific source of the support is necessary. These same questions may not however, be as psychometrically sound when specifying a particular source of support as done in the present study. It would be necessary therefore to develop a measure of emotional, informational, and instrumental support specific to different sources of support. An approach more similar to the NRI by Furman and Buhrmester (1985) would allow many different sources of support to be included. The NRI presents subjects with a relationship quality then requests subjects to rate how often that quality occurs in different relationships. With this approach Furman and Buhrmester have examined children's relationships with not only parents, friends and teachers but with grandparents and siblings as well.

In short, there are two different approaches that could be used to address the psychometric difficulties found in the present study when measuring emotional, informational, and instrumental support. The first is to use a larger sample size therefore eliminating some possible variations due to a small sample and also more closely replicate the original analysis. The second approach assumes the questionnaire is not valid and requires the development of a new questionnaire that would better measure the different types of support.

The Role of Parents, Friends, and Teachers. The results of the first research question indicated that early adolescents still perceive their parents as important sources of support for them. The findings also indicate that at this age, friends are starting to become more intimate players in adolescents' lives, providing them with not just social companionship but other psychological forms of support.

Parents were seen as very important people in early adolescents' lives. Across all test sessions, parents were rated as providing the most support in almost all categories, the one exception being social companionship (see Figures 1, 2, and 3). In approximately half of these comparisons, parents were rated as providing significantly more support than friends and on the other half there were no differences. Only on one comparison were friends rated as providing significantly more support than parents (i.e., social companionship support at test session two). It is interesting to note that at two of the three test times, parents and friends did not differ in the amount of social companionship support they provided to students. Finally, parents consistently were rated as providing more support than teachers.

These findings seem to be consistent with the research that parents were still very influential with early adolescents (e.g., Csikszentmihalyi & Larson, 1984). Parents were seen as providing more instrumental support than friends or teachers. This finding may reflect the greater resources parents would have compared to friends and teachers and their willingness to share them with their children (e.g., money, transportation, gifts).

The fact that parents were still seen as providers of social companionship to their children indicates the prominent role they still have in spending time with them. Researchers have found that adolescents spend increasing amounts of time with peers and less time with parents (e.g., Epstein, 1989) however, the present findings would suggest that at sixth and seventh grade, students still see their parents as people with whom they like to spend time.

That parents are still seen as playing such a relevant role in early adolescents' lives gives credence to the need to include them in studies of social support and school transitions. At this age parents are perceived as very supportive to young teenagers and therefore their influence is a relevant factor when examining ways of facilitating the transition to junior high school.

While parents are significant sources of support to early adolescents, the findings of the present study would suggest that friends are demonstrating increasing levels of importance to junior high school students. As hypothesized, one of the ways friends support their peers is with social companionship. At the beginning of seventh grade, students rated their friends as providing more social companionship support than parents or teachers. Parents were however, rated as providing equivalent amounts of social companionship as friends in sixth grade and later in seventh grade. As indicated above, this finding likely reflects the relevant role parents continue to play and not the lack of importance of spending time with friends.

Moreover, some of the results suggest the increasingly significant role friends play for early adolescents. While social companionship was a major source of support from friends, it did not differ significantly from the amount of emotional and informational support friends provided. In other words, early adolescents perceive their friends as providing equal amounts of emotional, informational and social companionship support. Thus friends of early adolescents are not only spending time with them but they are making them feel esteemed and accepted, and providing them with advice and guidance. These factors addressing the psychological well being of early adolescents would suggest an increased degree of intimacy in their friendships, a developmental pattern seen in previous research (e.g., Berndt, 1989).

Compared to parents and friends, teachers were consistently ranked third in providing support. This result should not be surprising given the greater amounts of time early adolescents spend with family and friends and the longer history they have with them as compared to teachers. Furman and Buhrmester (1985) had similar findings with children often rating teachers behind family and friends on several relationship qualities.

Based on Furman and Buhrmester's study, teachers were hypothesized to provide more instrumental support than other types of support. This hypothesis was not supported at any of the test sessions as teachers were rated consistently as providing more emotional and informational support than instrumental and social companionship support. One reason the hypothesis was not supported may be because Furman and Buhrmester's measure of instrumental support included informational type questions like providing guidance or advice. Their measure of instrumental support may be more like the SAB's measure of informational support. Another possible explanation may be that the modified SABs measure of instrumental support was not psychometrically sound as discussed earlier.

That teachers did not provide a great deal of social companionship support was not surprising. Beyond the time spent in the classroom it is unlikely that teachers would spend much time with their students socially outside the school. The finding that was not predicted was that teachers were perceived as providing more emotional support and informational support to their students than instrumental and social companionship support. This result would suggest that teachers are important adults in early adolescents lives as they provide these students with advice and guidance and information that makes them feel esteemed and accepted.

It should be note here however that there were changes in these ratings of teachers' support. When the ratings across the three test sessions were compared, it was found that teachers were rated as providing significantly less social companionship, emotional and informational support in seventh grade than sixth grade. It is likely that these changes were seen because once in seventh grade students had new teachers with whom they had spent less time and therefore were less familiar compared to their sixth grade teachers. These findings did not change at the third test session indicating that after four months with their new teachers, students still did not perceive as much support from them as their sixth grade teachers. Whether this difference would disappear toward the end of seventh grade when the students had spent as much time with these teachers as in sixth grade is unknown.

Future researchers may wish to include another test session toward the end of seventh grade to compare these variables. This research may be helpful in examining the effectiveness of school B's middle school philosophy with core teachers (much like elementary school) compared to a more traditional junior high school organization in school A. If school B's students' ratings of support from teachers increased back to levels similar to sixth grade ratings, it may provide additional support for the effectiveness of the middle school philosophy. If the differences between sixth and seventh grade ratings remained it may lend support to Eccles' view that the teaching style of junior high school teachers does not match adolescents' psychological needs (e.g., Wigfield, Eccles, & Pintrich, 1996).

Sex Differences. Gender is an important factor to consider when studying adolescent peer relationships because studies have shown girls' friendships are more intimate than boys' friendships (e.g., Berndt & Perry, 1990). Results from the present study support this finding at each of the test sessions. In sixth grade girls rated their friends as providing greater personal intimacy, emotional and informational support than boys did. At the second test session girls indicated greater personal intimacy and informational support from friends and girls were less lonely overall than boys. And at the third test session girls indicated greater personal intimacy with friends than did boys. The one constant variable across all three test sessions was personal intimacy which is related to the students' perception of having a close friend. This finding is consistent with the research that indicates that girls have more intimate friendships with one or two close friends compared to boys who have less intimate friendships with larger groups of friends (e.g., Belle, 1989).

Only three of these sex differences involved support (emotional and informational). Emotional and informational support are related to the information that a person is esteemed and accepted and has an intimate friendship. These factors would reflect the greater support and maturity of these friendships for girls. Interestingly, by mid-seventh grade, there were no sex differences in the amount of support from friends. It is possible, and some theorists have suggested, that there is a developmental lag between boys' and girls' friendships with boys' friendships becoming more intimate but at a delayed rate from girls' friendships.

The two areas of support that girls and boys did not differ on were social companionship and instrumental support. Given that spending time with friends and sharing are hallmarks of friendship that are fairly well established by early adolescence, it is not surprising that girls and boys did not differ on these types of support (e.g., Berndt, 1989).

Research Question One Conclusions. The results of the present study would indicate that students were able to differentiate between different types of support.

There was some overlap between emotional and informational support with no differences found between these two types of support from parents, friends, or teachers. Students did perceive differences in social companionship, instrumental and emotional/informational support. There also were differences in whom they perceived was providing different types of support. Generally speaking, students were able to perceive differences in the type and amount of support provided by parents, friends and teachers.

These findings would suggest that students perceive their parents as providing a great deal of support. While peers are of increasing influence, parents were consistently in the forefront when comparing parents, friends and teachers as sources of support. Given this finding, it seems imperative that future studies of support during school transitions include parents.

Friends are frequently included in studies of support and school transitions and should be included because of their increasingly prominent role in adolescents' lives. They should not however, be considered the only source of support as parents continue to play a key role in supporting their children.

Teachers were not rated as highly as parents or friends but they were seen as providing emotional and informational support to students especially at sixth grade. Examining changes in the amount of support they are perceived to provide across a longer time period would be useful to further investigate qualitative differences in perceived teaching styles from elementary to junior high school.

One other issue raised earlier suggested different sources may be able to provide support to compensate for low levels of support from another source. For example, encouraging peer support for students with low levels of parental support may help compensate for the potentially negative effects from little parental support. Or additional teacher support may be useful for students with low levels of peer support. While the results from the present study were not designed to address this issue, the findings suggest that early adolescents do perceive differences in the amount and type of support they receive from parents, friends, and teachers. These findings would suggest that there would have to be a significant increase in the amount of support from one source such as teachers to equal the amount of support provided by parents or friends. While increased support from one source may have some beneficial effects, it may not be enough to compensate for a lack of support from another source. It may be best to focus compensatory efforts on increasing support from the source that is lacking.

Research Question Two: Do Different Types of Support Predict Adjustment?

The second research question asked whether different types of support mediated adjustment in different domains, specifically, academic, social and emotional adjustment. It was hypothesized that different types of support would serve different functions. Social support from peers was hypothesized to predict social adjustment and emotional support from parents and friends would predict emotional and academic adjustment following a transition to junior high school. Contrary to these predictions, social companionship support did not predict social adjustment nor did emotional support from parents and friends predict emotional or academic adjustment. In the following section I discuss some of the methodological and theoretical issues that may explain the present findings.

Measurement Issues. Again, the psychometric limitations of the modified SAB affect the degree to which any conclusive statements can be made about the predictive ability of informational, emotional, and instrumental support. The second research question was based on the assumption that there would be valid measures of the different types of support. Without support for that assumption any conclusions must be made tentatively and with great caution. As indicated above, to address the psychometric problems of the modified SAB a larger sample size may be needed to get a more accurate evaluation of it. If the modified SAB is still problematic, then perhaps a new measure of different types of support from different sources may be necessary.

Another measurement problem that arose was with the achievement scores for seventh grade students. Only one of the two junior high school participating gave percentage grades while the other school gave ratings on a 1 to 4 scale. With the exception of one score out of all the subjects' grades for four different courses, the range of grades was limited to four possible scores. This approach severely limited the amount of variation between grades and therefore the ability of predictor variables to correlate with it.

Similar difficulties were found with attendance data. Over the first semester in seventh grade there was not much variance in students' attendance with students' absent from zero to eight days. Researchers who have used these variables in the past have measured cumulative attendance and GPAs for the school year (e.g., Barone et al., 1991; Felner et al., 1981). Future research in this area may need to use attendance and achievement data for the entire school year and not just one semester.

It also is possible that whatever effects the transition to junior high school has, they may not be evident in the first semester. Or they may be small but pervasive effects that are only noticeable after an entire academic year. To address this possibility it would be useful to use cumulative seventh grade attendance and achievement data at the end of the school year to clarify this issue.

Two group differences were found in the third test session data that may have had some implications for the results of the multiple regression analyses. First, the two junior high schools differed on the composite measure of achievement from the first semester of seventh grade. Unfortunately, with the sample size of the present study it was not possible to complete separate analyses. Second, there were sex differences found on the personal intimacy measure of loneliness, one of the criterion measures of social adjustment. Again with the small sample size separate analyses were not a possibility.

In examining the achievement differences between the two schools, it should be noted that this composite achievement score was the only variable from all of the variables measured at the three different test sessions that differed significantly. No other variable was found to differ between the two junior high schools. Also, as indicated earlier, the achievement scores did not vary a great deal. Finally, the results of the multiple regression indicated only one predictor variable that accounted for any significant amount of variance in achievement scores and that amount of variance was rather small (10%). Given these similarities between the two groups and the statistical limitations, it does not seem likely that there would be any differences on the multiple regression analyses if they were done separately for the two junior high schools if enough subjects were tested. This finding cannot be confirmed however unless the study is replicated. It would therefore be necessary to replicate this study using a large enough sample size to be able to do separate analyses should the schools involved differ in any significant way.

The sex differences found in personal intimacy may have had an impact on the analyses using personal intimacy and the loneliness measure (a composite of personal intimacy and group integration) as criterion variables. Girls were found to have more personal intimacy in their friendships than did boys and this was a finding consistent over the three test sessions. Because girls differ from boys on the degree of intimacy in their friendships, it is possible to consider that girls and boys may differ in the types of support that nurture and maintain those relationships. If girls' friendships are more intimate than boys', they may need informational and emotional support from friends to provide them with help coping with problems and information that confirms their self worth. Their friendships may not rely as heavily on group activities as boys' friendships do. And boys may need to spend more time with their friends engaged in activities to affirm their sense of belonging to a peer group than do girls. Thus, another branch of this research may be to examine the potential sex differences in the role different types of support plays in social adjustment.

Theoretical Issues. When examining the predictors that significantly accounted for some of the variance in the criterion variables, it is noteworthy that support from friends was frequently present. For emotional adjustment, informational and instrumental support from friends at the beginning of seventh grade predicted measures of self worth and state anxiety from the third test session. Informational support from parents and teachers measured at sixth grade were the only other predictors of self worth and state anxiety when the predictors were all four types of support from parents, friends, and teachers. The hypothesized emotional support from parents and friends did not significantly predict emotional adjustment.

These results may reflect the fact that emotional and informational support were not distinguished by the principle components factor analyses and therefore may overlap in what they measure. An alternative explanation may be that while early adolescents appear able to distinguish between different types of support, these different types may not provide different functions. It is possible that all four types of support increase general self esteem and self esteem is the variable that mediates emotional adjustment. This theory will be discussed further below.

When using the four different types of support from parents, friends, and teachers as predictors, support from friends was almost exclusively the predictor to account for variance in the measures of social adjustment. Instrumental support from teachers at the beginning of seventh grade was the only other significant predictor accounting for merely 5% of the variance in personal intimacy scores from the third test session. Emotional support from friends at the beginning of seventh grade accounted for some of the variance in social adjustment measures and also informational support from friends at both the first and second test sessions accounted for a significant percentage of the variance. Further, support from parents did not factor into any of the social adjustment scores even though parents were found to provide the most support, including social companionship support, to their children.

It is possible that at the junior high school level, early adolescents are more sophisticated about their friendships than hypothesized and the simple act of spending time together enjoyably with peers does not affect their sense of loneliness, group integration or intimacy with friends. The subjects in the present study may need more psychologically intimate relationships with their peers to feel socially well adjusted. Again, this proposed effect may suggest another factor is mediated by support.

There was not strong evidence that support predicts academic adjustment as hypothesized. Only instrumental support from teachers in sixth grade predicted any variance in seventh grade achievement scores and none of the variables predicted seventh grade attendance. While there were some measurement difficulties as discussed above, it is interesting to note that support from their sixth grade teachers predicted to a small degree, how students did in seventh grade. Perhaps students who felt supported by their sixth grade teachers also felt more confident and therefore did better academically in seventh grade. Or simply, students who were strong academically, enjoyed school, liked their teachers, and perceived more support from them than students who did not fair as well academically. Any number of alternative hypotheses could be made if other mediating variables are considered.

It is possible that while students may be able to perceive different types of support, these different types of support may not have different functions. In this study, I hypothesized that support would mediate adjustment but an alternative theoretical approach may be that there are other variables that support mediates that in turn affect adjustment to this transition to junior high school. Perhaps a general outcome of different types of support is an increased sense of self esteem and by feeling confident and secure, early adolescents are able to face social, emotional and academic challenges with greater ease. That would explain why informational support from friends predicted social adjustment. Students who have intimate friendships may feel more confident in social situations and therefore experience good social adjustment. They do not necessarily need social companionship support to be socially well adjusted. Or perhaps they need more support from their friends than the comfort of merely spending time with each other.

The present study used Harter's scale of perceived competence as a measure of emotional adjustment. Informational support from friends and parents were significant predictors of that variable. Therefore, there was some evidence that support predicts self worth. In the present study difficulties with measures of support may mask the fact that other types of support would predict self worth as well. Therefore future researchers in this area may wish to consider self esteem as a possible mediating variable.

Examining these findings in terms of the ways social support mediates stress would involve considering the main and buffering effect models. The main effect model suggests that social support has a beneficial effect on an individual's psychological adjustment no matter how much stress is being experienced. On the other hand, the buffering effect model predicts an interaction between levels of stress and levels of available social support. Social support is related to psychological adjustment only when individuals are experiencing stress (e.g., Wolchik et al., 1987).

Cohen and Wills (1985) found that the buffering effect model was supported when measures of social support were specific and measured the perceived availability of interpersonal resources responsive to the problems the stressful event produced. Given the specificity with which support was measured in the present study, the effects of support may be evident only in those subjects who perceived the school transition as extremely stressful. As a group, the present sample did not rate school as significantly more stressful during the first weeks of seventh grade than in sixth grade or later in the seventh grade year (see Table 4).

Assuming a buffering effect model is appropriate for the present study therefore would require a much larger sample size to isolate a large enough group of students who found the school transition very stressful. With this special group, the buffering effect model would suggest effects of social support on psychological adjustment would be seen. It is possible that the two junior high schools in the present study were not typical schools in that each, in very different ways, provided students with an environment that effectively minimized any school transition stress. Thus few students felt the transition to junior high school was a stressful event. I will not turn to a discussion of the schools' approaches to the transition and their implications.

Differences Between the Schools

Schools A and B were similar in a number of ways: they were both relatively new schools, both had similar numbers of students and staff members, and both had caring and concerned teachers and supportive parents who valued education. These two schools differed however in their organization and, of particular relevance here, in their approach to helping students make the transition from elementary school to their schools. To summarize, school A had a fairly traditional organization with changing classes and different teachers. They went to great lengths to ensure that students did not feel anxious when first attending their school. They had an outreach program to visit sixth grade students and had their seventh grade coordinator meet with each of the sixth grade teachers from the feeder schools to obtain any pertinent information to help the students with the transition. They had an orientation night and allowed sixth grade students to spend a half day visiting the school. Teachers called their students before classes started to welcome them and answer any questions.

School B, by comparison, did far less to acclimatize their students. Presentations were made to the sixth grade classes and the sixth grade teachers from the feeder schools were encouraged to do walkovers to tour the school. Few other activities were organized because school B used a middle school philosophy and approach. One feature of this approach involved the presence of a core teacher who taught core subjects and stayed with the students for their three years of junior high school. The students did not move every period to a new classroom and a different teacher rather they stayed in their classroom and another teacher would come to them. If they did change classes, it was for complementary subjects such as French and music. During the first few weeks of seventh grade the students stayed with their core teacher and did not change classes. When they did eventually change classes, they moved as a group. Because the organization was familiar to their sixth grade experience, students were not perceived by the staff as very anxious about the transition. (For a more detailed description of these two schools see Appendix A).

It would appear that the two schools have very different approaches when it comes to coping with school transitions. Somewhat surprisingly, despite these very different approaches, there were almost no significant differences between the two schools on any of the variables measured. Students from schools A and B did not differ in their ratings of support from friends, parents or teachers, nor were any differences found in adjustment measures of stress, self worth, state anxiety, loneliness, or attendance. The only variable that was different was a composite score of seventh grade achievement with school A scoring significantly higher than school B. Given the fact that the two groups of students did not differ on levels of stress or state anxiety, it is likely that this difference in grades was related to factors other than the stress of a school transition.

The lack of any differences in measured variables between the two schools would seem to suggest that both schools were effective in their approaches to alleviating school transition stress. While school A had a very direct approach to helping students cope with the transition school B with its organizational differences (i.e., a middle school approach) indirectly alleviated the stress of the transition.

It may be argued that early adolescents simply do not experience any stress when making the transition to junior high school and the absence of any differences in the variables measured would be found regardless of the schools involved. This explanation does not seem likely given the number of studies that have found school transition stress (e.g., Blyth et al., 1983; Eccles & Midgley, 1990; Snow et al., 1986). Further, the two schools involved in the present study were relatively new and both principals were involved in the development and planning of their schools. This involvement included the need to create effective schools that addressed the needs of the students. Thus both principals appeared anxious to create environments in which their students would feel welcomed and at ease.

Another factor that is relevant to this discussion is the fact that students' ratings of stress and state anxiety did not change over the three test periods. There was no elevation of stress or anxiety seen in the first weeks of seventh grade. It is possible that measuring stress and anxiety in the second week of school was too late to see any negative effects of the transition and that students acclimatized to the change by the second week of school. If this is true then future research would require testing the students at an even earlier date, perhaps within the first few days of school.

It is also possible that the students in the present study did not find the transition stressful. The lack of anxiety may result from the schools' approaches to facilitating the change and easing the transition to the new schools. Again, this perception would suggest that the two schools involved in this study were extremely successful in creating environments that allowed students to enter without anxiety.

It appears that both school A and B were successful in alleviating the stress that usually accompanies the transition to junior high school. Given the very different approaches both schools used suggests that there is no singular approach that is best. It may be that any efforts to support students by helping them cope with change by preparing them for the change or limiting the changes experienced, can be effective in minimizing the stress of a school transition.

Theoretical Issues. Two different theories have been developed to explain why school transition stress occurs (see Chapter 2 for details). Eccles and her colleagues (e.g., Eccles, et al., 1993) perceived a mismatch between the school environment and the students' developmental stage of psychological needs. This stage-environment fit theory proposes changes to the structure of junior high school to eliminate the mismatch. School B's middle school philosophy would fit with the proposed changes that Eccles' theory supports. Therefore, the lack of stress students at School B experienced could be perceived as support for the stage-environment theory.

On the other hand, Simmons and her colleagues (e.g., Simmons, Burgeson, et al., 1987) theorized that the negative effects of a school transition are caused by the number of changes early adolescents experience in different domains (e.g., social, academic, biological). Without stability in any domain, early adolescents begin to feel insecure and their ratings of self-esteem decline.

The two different approaches used by schools A and B in helping students cope with the transition were equally effective in that neither group differed on ratings of stress, perceived support or emotional and social adjustment. While Eccles' theory is supported by the positive outcome of school B's middle school approach, it cannot explain why a more traditional junior high school organization and structure such as school A's was equally successful. Simmons' arena of comfort theory could explain why the two different approaches were so successful. In school B the structure and organization was familiar and similar to the students' elementary school experience. Therefore, students did not experience a great deal of change and instability in this particular domain. Less change would mean fewer feelings of insecurity and little change to their sense of self-esteem.

The structure and organization of school A was very different from the students' elementary school experiences (e.g., changing classes, different teachers, different groups of students in each class). However, much effort was put into preparing the students for these changes and addressing their concerns before they even arrived at their new junior high school. Students attending school A had been through tours of the school, orientation night, and had been allowed to spend part of a day with a student to get a chance to experience life as a seventh grade student. All these efforts likely made the transition to junior high school less stressful because the change of schools was so well prepared for. The preparations would decrease the amount of change that the students' perceived they were experiencing and the academic domain would not be seen as unstable. Again according to the arena of comfort theory, less change would lead to fewer feelings of insecurity and less of an impact on students' sense of self-esteem.

Thus the results of the present study would suggest that the arena of comfort theory better explains the reason why students in the present study did not experience stress around the school transitions. It also implies that self-esteem is an important mediating factor in how stress affects early adolescents' ability to adjust successfully to a school transition.

Educational Implications

The results of the present study have a number of implications for how school personnel can facilitate the transition from elementary to junior high school for their students. The subjects participating in the study rated their parents as important sources of support. Thus it would seem logical to have parents involved in the school transition process. School A had a parent orientation night where parents were invited to visit and tour the school and hear some presentations by teachers and students. This type of event may help parents and students by familiarizing parents with the new environment their children will be participating in. And students may feel more supported by their parents knowing there is a shared knowledge of their new school.

Friends were seen as an important source of support for students in early adolescence. Of particular relevance was social companionship support or the support that comes from spending time with one's friends. When administrators are organizing the seventh grade classes it may be beneficial to ensure that students are placed with a few familiar peers or friends from their elementary school classes. Having the support of friends in one's new class may help offset any stress and anxiety that may arise from a school transition. This effect was examined by McDougall and her colleagues (McDougall, et al., 1992). Students with friends in their new class reported less loneliness, more feelings of peer integration and intimacy, and greater happiness with their class composition than students in a class without friends or familiar peers. The findings from the present study would support those of McDougall et al. and reinforce the importance of carefully constructing new class groupings in junior high school.

As for teachers, the subjects consistently rated their sixth grade teachers as more supportive than their seventh grade teachers. There were many reasons explaining why this finding may exist (e.g., greater familiarity and time spent with sixth versus seventh grade teachers, one sixth grade teacher compared to multiple seventh grade teachers).

Regardless of the cause, sixth grade teachers should be viewed as individuals who are perceived as supportive to their students. Involving them in any process that may facilitate the transition to junior high school would seem a reasonable and possibly very effective effort. For example, school B encouraged these teachers to do walkover visits with their classes to tour the junior high school and school A involved these teachers by conferencing with them about the students. By having them get involved with and help their students with the transition to seventh grade takes advantage of sixth grade teachers' positions as respected and supportive school personnel to the students' benefit.

The two junior high schools in this study had very different approaches to helping students cope with the transition to seventh grade. However, both appeared equally successful as there were no significant differences between the two groups on any measures of stress or perceived support. School A went to great lengths to ensure that students would be familiar and comfortable with their new environment (e.g., school visits, phone calls, orientation night, pairing with older students). School B, on the other hand, did fewer orientation-type activities but had a middle school approach which led to fewer changes from the elementary school organization to which students were accustomed. Thus whether school personnel try to decrease the number of changes students face when approaching a school transition or whether they help prepare students for the upcoming changes, either approach can be successful. This finding is important to school administrators concerned about helping students leaving their school or entering the school. The present study would suggest students are adaptable as long as some effort is made to help them with the changes. School administrators have some flexibility in how they go about facilitating a transition. The two junior high schools involved in this study used very different approaches and both resulted in students who made a relatively smooth transition.

Suggestions for Further Research

As indicated throughout the discussion section, there are a number of avenues for future research based on the findings of the present study. A number of these suggested directions would address methodological limitations of this study. A primary concern would be to address the way different types of support are measured. As indicated earlier, the modified Scale of Available Behaviors did not clearly load onto three separate factors. Alternative approaches would include a replication of the present study but with a larger sample size to more closely approximate that of Dubow and Ullman's (1989) sample size. Or perhaps a different measure of the four types of support are needed.

A second methodological concern was the limited variability of attendance and achievement data. It may be worthwhile to extend the study to cover a full year from spring of sixth grade to the end of seventh grade. Attendance data for the two full school years could be compared and this information may provide more accurate and comparable data than attendance for the last term of sixth grade and the first term of seventh grade.

Another benefit of extending the study to the spring of seventh grade would be to provide a more equitable comparison of the students' ratings of their teachers. While they have more teachers to get to know than in sixth grade, comparing students' ratings of teachers in the spring of seventh grade would at least assume that they have known their teachers for as long as they knew their sixth grade teachers. Examining ratings of teacher support would then be more comparable than in the present study when students had spent eight months with their sixth grade teachers compared to a few weeks to four months with their seventh grade teachers.

To address the problem of different grading procedures among schools, a standardized achievement test with standardized scores may be more appropriate if possible. This approach would avoid trying to compare the different rating systems used by different school. It also would provide more variability and reliability than the 4-point system used by the junior high schools participating in the present study.

A final methodological revision would be to retest student within the first week of seventh grade. Very little evidence of stress was found when the testing occurred two weeks into junior high school. It is possible that the maximum level of stress occurs within the first few days of junior high school therefore testing at that time may get the best indication of students' maximum stress levels. Of course, it is also possible that the students in this study did not experience a great deal of stress because of the preparation they had for the transition or the lack of substantive differences in the school's organization and structure. Involving other junior high schools with different approaches to coping with school transitions would be necessary to further examine the effectiveness of the transition models used by schools A and B.

From a more theoretical point of view, further research efforts would be needed to examine the possible role of social support within a buffering effect model. As indicated earlier, the buffering effect model (e.g., Cohen & Wills, 1985) predicts an interaction between levels of stress and available social support. The effects of social support only may be evident in students who perceived the school transition to be very stressful. To examine this hypothesis a much larger sample of subjects would be needed to obtain a subsample of students who rated the transition as stressful. Within that group, the data could be analyzed to determine the effects of social support on adjustment outcomes. If the buffering effect model is appropriate and applicable, as Cohen and Wills (1985) suggest it would be, then the various measures of social support would be expected to have an effect on adjustment.

An alternative approach that may provide insight into the specific difficulties students experience, would be to do an individualized interview with the few subjects who do find the transition stressful. These interviews could be done with individuals or small groups and focus on the students' perception of what made the transition stressful and what factors may alleviate these stresses. This type of approach may provide more information and understanding of this small population than would be available when studying a large sample.

Examining sex differences in social support and social outcomes was not a main purpose of the present study. However, girls did rate their friendships as having more personal intimacy than did boys. Further, girls rated their friends as providing more emotional and informational support than boys' ratings of support from their friends. These sex differences in the levels of support and intimacy in early adolescents' friendships may affect how social support mediates adjustment for boys and girls. As indicated earlier, if girls' friendships are more intimate than boys' friendships, then girls may need emotional and informational support from their friends to help them cope with problems and they may need information that reaffirms their sense of self-worth. Boys engage in more group activities than girls do (e.g., Berndt & Perry, 1990). Boys may need that activity to develop a sense of group belongingness and thus derive a sense of self-worth. While using different approaches (personal intimacy versus group activity) girls and boys may arrive at the same outcome, a sense of self-worth. Further research would be needed to examine these sex differences in how different types of social support affects social adjustment.

Implications of the Findings on Theory and Practice

There are a number of implications the finding from the present study have for research into the school transitions. First, from a practical point of view, is the importance of including parents when examining different sources of support for early adolescents. Many researchers have focused exclusively on peer support (e.g., Berndt & Hawkins, 1991a; Hirsch & Dubois, 1991). The results of the present study indicated the important role parents continue to play in early adolescents' lives for not only emotional and instrumental support but for social companionship as well. Developmentally, early adolescents are beginning to seek greater independence and autonomy from their families (e.g., Epstein, 1989). However, throughout adolescence and particularly in early adolescence, parents continue to be a major source of support and companionship for their children.

Further, as indicated earlier, there are a number of educational implications the findings would have for schools looking to facilitate the transition from elementary to junior high school. These implications would include involving parents, friends and teachers in the transition process. As well, the findings provide evidence that there is no one specific approach to facilitating the transition. Efforts to decrease the number of changes or efforts to familiarize students with the changes they will be facing were perceived as equally effective because there was no difference in either groups' ratings of stress or emotional and social adjustment.

The effectiveness of the two junior high schools' different approaches to the transition into seventh grade also have implications for the two competing theories of school transition stress. Eccles' theory of stage-environment fit (e.g., Eccles et al., 1993) would not explain why students at school A, in a more "traditional" structure, were as equally well adjusted after the transition as students in school B in a middle school environment. Simmons' arena of comfort theory (e.g., Simmons, Burgeson, et al., 1987) looks at the degree of change experienced by students and their resulting sense of instability if numerous changes exist. In turn, increased instability leads to a decreased sense of self-esteem and adjustment difficulties. While the findings cannot dispute Eccles' argument that the structure of a traditional junior high school does not fit the psychological needs of early adolescents, it suggest there are other factors that may play a more salient role in how students adjust to the transition. And as suggested earlier, self-worth or self-esteem may be the mediating factor in this process.

Informational support from friends and parents were significant predictors of self-worth in the present study. Problems with the measures of support may have masked other effects of support on self-worth. While further research would be necessary to determine the extent to which social support is mediated by self-worth it is worthwhile to consider its possible role. Cobb originally defined social support as "information leading the subject to believe that he is cared for and loved, esteemed, and a member of a network of mutual obligations" (Cobb, 1976, p. 300). A sense of self-worth is an important part of that definition. By considering self-worth as the mediating variable between social support and adjustment outcomes would necessitate an additional step when examining the process of how social support affects adjustment to a change. The buffering effect model would need to be modified to include self-worth as part of the process in how social support affects adjustment. The important factor may be to examine how well the sources and types of support affect self-worth. The amount of support may be irrelevant when considering how effective it is in changing self-worth. For example, a student with low self-esteem may get a great deal of support from friends, parents and teachers, but that support may have little effect on a measure of self-esteem. Conversely, a student with high self-esteem may need only a little support to maximize a sense of self-worth and have a positive adjustment to a school transition.

Another implication of self-worth as a mediating variable is that self-esteem in different areas may be what affects adjustment. Harter (1982) breaks self-worth into different areas such as cognitive, social and physical as well as general self-worth. A strong sense of cognitive self-worth may lead to positive adjustment in academic areas. Further research would be needed to examine whether different types of social support affect self-worth in different areas.

Conclusions

There are three general conclusions that can be made from the present study. The first is that early adolescents are capable of perceiving differences in the types and amount of support that they receive from parents, friends, and teachers. Parents remain very important and influential people at this age and peers were becoming psychologically supportive. Teachers are less supportive than parents or friends but they do play a role in providing support to early adolescents. One of the limitations of the present study involved a lack of psychometrically sound measures of different types of support. Future studies may need to be focused on evaluating the measures of informational, emotional, and instrumental support by using a larger sample size or if that does not support the modified SAB, then a new measure may need to be developed.

A second conclusion is that there is preliminary evidence to suggest that specific types of support may indirectly affect psychological adjustment. There was very little evidence to suggest that support was related to academic adjustment and perhaps that is because there are many other factors related to how well a student does in school (e.g., intelligence, home environment, motivation). There is reason however, to believe that support may influence self worth which in turn affects social and emotional adjustment. The buffering effect model would suggest that these effects may only be evident when subjects are experiencing high levels of stress. For the purposes of the present study another limitation was that the students participating did not experience a great deal of stress when they made the transition to junior high school.

One direction future studies could take would be to focus only on those students who do find the transition to junior high school stressful. This approach would require screening of a large number of students in order to find a sample size large enough to run the appropriate analyses. An alternative may be to find other life experiences that may be stressful (e.g., birth of a sibling). The difficulty with many stressful life experiences however, is being able to predict them.

The third conclusion was that different approaches to dealing with school transitions appear to be equally effective in decreasing students' anxiety. It was encouraging to find that whether school personnel seek to help students prepare for the change or whether they decrease the number of changes that students experience when entering junior high school, both approaches can be effective in helping students cope with the transition. In previous studies researchers have found both approaches effective by either preparing students for the change (e.g., Bogat, Jones, & Jason, 1980; Snow et al., 1986) or by decreasing the number of changes students experience (e.g., Felner et al., 1982; McDougall et al., 1992).

Theorists agree that further research is needed to help understand the processes involved in stress mediation for early adolescents (e.g., Graber & Brooks-Gunn, 1996). By better understanding these processes, a conceptual basis for the role social support plays in the lives of early adolescents may be determined. It is reassuring to know however, that school-based efforts can be very effective and make a difference in how students cope with the transition from elementary to junior high school.

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Appendix A

Introduction

The subjects for this study were from two junior high schools in different areas of a large city. Having two schools would therefore provide two different contexts under which the students were experiencing school transitions. These different school contexts may affect the way students experience and react to their new school. Researchers have been examining the impact school contexts have on a variety of outcomes including self-esteem, achievement and attendance (e.g., Bowers & Burkett, 1989; Hoge, Smit, & Hanson, 1990; Phillips, 1997).

In this appendix I will provide a description of each school. Demographic information about the schools and their neighbourhoods will be included as well as descriptions of the schools' organizations and philosophies, the staff, students, and parents, and how each school handles the transition to seventh grade. Information for this appendix came from census data, interviews with principals and teachers, informal discussions with students, school handbooks and newsletters, and observations in the school.

School A

Demographic Information

School A was a new school in its fifth year of operation the year the subjects were entering seventh grade. This junior high school covers seventh, eighth and ninth grade for 677 students, with 230 seventh-grade students. Many of the 30 teachers have been at the school since it opened with only five new teachers the year of the study. The principal also has been at the school since it opened and was involved with its planning and development.

School A is a boundary school which means the boundary for the area served is closed; therefore nearly all the students live in the school's neighbourhood. A few students leave the area to go to special sites (e.g., language immersion programs). Similarly, a few spaces that are not filled by local students can be taken by students living outside the school's boundary. Because there are more students applying to school A than there are available spaces, the extra spaces are given out on a lottery system.

The immediate neighbourhood around school A appears very young with many large houses being built. City census data from 1991 indicated that there were no houses built in the area prior to 1981. Average household and family incomes ranged from $76,373.00 to $77,505.00 (Statistics Canada, 1991). These census data should be interpreted with caution because the boundaries used for this neighbourhood census are not the same as those used by the school for enrollment. In fact, just north of school A is an older area developed in the 1960s with many row houses and low-rise apartment buildings and lower average family incomes ($48,633.00; Statistics Canada, 1991). Some students from this neighbourhood also attend school A. Therefore, the students represent a wide range of different socioeconomic backgrounds with slightly more students coming from upper-middle class homes than working class families.

School Organization and Philosophy

Both schools involved in the study were from the same school board and therefore followed its mission statement: "The mission statement of Edmonton Public Schools, advocate of choice, is to ensure success of all students in their goals of schooling, and to assure the parents of each child and the community as a whole that this mission is being accomplished through exemplary staff performance, program diversity, measured student achievement of outcomes, and site-based decision making, and by reinforcing the responsibilities and commitment of parents, students, and community."

In the school handbook for school A, the principal and curriculum coordinator stated that the educators of the school were charged with the responsibility of assisting the students to become successful individuals with the following characteristics: (a) a thinking person capable of self-expression; (b) a productive worker who realized that work is a means of survival; (c) a good citizen who contributes to our province and our country; (d) a knowledgeable person capable of using information profitably; (e) an ethical, caring person; and (f) a person who appreciates the value of life long learning and change.

The educators at school A also recognized that there would be a wide range of student differences and to provide these students with opportunities for challenge and success there would need to be a skillfully structured learning environment. Thus the school was organized according to the traditional grade structure but tried to accommodate the student differences by using different strategies such as cooperative learning, peer-tutoring, and grouping. Physically, the school was designed to provide a variety of spaces for different types of instruction including music, art, and drama rooms, science and computer labs, a large gymnasium and independent study rooms adjoining regular classrooms.

A unique feature of school A's organization is the use of a cross-graded guidance and support program. This program was designed to: (a) meet the varied needs of adolescents, (b) to promote a positive school climate, (c) to provide opportunities for student leadership, (d) to enhance student decision making skills, and (e) to provide instruction in selected components of the health curriculum.

All students at the school are assigned to a cross-graded guidance class (CGC). These classes are made up of students from seventh, eighth, and ninth grade and they meet in the morning and afternoon each day for the entire school year. The groups are kept together for the entire three years of junior high with new seventh grade students replacing the graduating ninth grade students every year. The CGCs help facilitate the mixing of students from all three grade levels not necessarily for socializing but for helping and teaching each other. For example, on the first day of school a double guidance period is scheduled so the eighth and ninth grade students of the CGC can take the new seventh grade students around with their schedules and show them where their classes are and help them with any other problems like finding their lockers.

In the CGC they talk about things like self-esteem, peer relationships, and decision making processes about topics like drugs and alcohol. The principal said that with this cross-age group a variety of experiences and knowledge are available and also that the messages were more powerful coming from peers instead of adults. The CGCs also deal with ongoing issues related to the school and concerns about things at school such as new rules. These groups help the students understand the school's goals and orientation.

The ninth grade students are encouraged to be leaders and someone the younger students can look up to and turn to for help. For example, the ninth grade students are often the ones to sit down with the younger students to check their agendas and show them how to fill out the homework check and how to do it effectively. Again, the staff feels these messages and instructions are more "real" when they come from a peer rather than a teacher.

School A has monthly assemblies that reinforce some of the issues that are discussed in the CGCs. These assemblies also provide opportunities to recognize students who have excelled in some way including athletics, arts, academics, and service to the school. The tone of the assemblies is very positive and upbeat with a great deal of cheering. In short, these are motivational gatherings that focus on the high standards of the school.

The Transition to Seventh Grade

To help facilitate the transition to seventh grade, school A begins in the spring of sixth grade with an outreach program. Visits are made to the elementary schools to talk to sixth grade students and their parents. In addition, the seventh grade coordinator meets with each teacher at the sixth grade level to discuss each student. Forms are completed by the teachers and students with information that may help students with the transition to seventh grade. The information may include things like which students work well together and which students do not get along. The information is used as well as meetings with the sixth grade teachers to compose each seventh grade class student by student.

Within the school there is a parent orientation night with a tour of the school and presentations by teachers, the principal and students. The sixth grade students also can spend a half day visiting the school. During these visits they are paired with a seventh grade buddy, given a tour of the school, and shown the things that a seventh grade student does at school.

The weekend before school starts in September, the CGC teachers telephone the new seventh grade students coming to their classes. The teachers welcome the students and explain that they will be in that teacher's class. Teachers give the students the room number, directions on how to get to the room, what they need for the first day, reassurance, and they answer any of the students' questions. The teachers feel these phone calls help decrease the first day anxiety most students have and many students and parents appear to appreciate the call.

As mentioned before, seventh grade students are assisted on the first day of school by the older students in their CGC. Being in a cross-graded class allows seventh grade students the opportunity to ask questions about the school to fellow students that they may not feel comfortable asking their teachers.

Another feature of school A's organization that can benefit the new seventh grade students are the team meetings the seventh grade teachers hold. These meetings are held on a monthly basis and allow the teachers the opportunity to work together on programming, to problem solve, and to discuss any students having difficulties. They can identify students who may not be adjusting well to the school and brainstorm ideas to try to help these students. For example, some students may not be working well together in one class but may work better apart or with another group so the teachers try to find an appropriate place for them. These meetings provide the opportunity for communication among the seventh grade teachers so a more complete picture of each student's progress and adjustment to junior high school is available instead of what is seen in discrete classrooms.

The principal and seventh grade coordinator felt that being a boundary school and having a limited number of elementary schools sending large groups of students helped facilitate the transition. They have developed a support network with the neighbouring elementary schools and have gotten to know the sixth grade teachers. The seventh grade coordinator meets with the sixth grade teachers and discusses individual students before they even arrive at junior high school. The sixth grade teachers appear very comfortable about calling school A and informing them of specific issues some students may be dealing with and seeing that effective strategies implemented in sixth grade are continued through seventh grade. In other words, there is concern for the students that follows them from one school to another and is not broken once the students change schools.

Within this family of schools, school A appears to have a close relationship with its feeder schools. One of the elementary schools has adopted school A's homework update procedure so when their students arrive at junior high school, they are faced with a familiar way of doing homework checks. Another way links have been made between feeder schools and the junior high school is a Santa letter program. Second grade students write letters to Santa Claus and the seventh grade students write replies. The second grade students are invited to school A to receive and read their letters from Santa Claus. This tradition began when the school opened and the second grade students from that first year are now the seventh grade students writing replies. Other activities like track meets and drama nights also are organized as ways of getting the elementary school students involved with the junior high school. With these many and varied contacts throughout their elementary school years, seventh grade students arrive at junior high with some sense of familiarity and hopefully, lessened anxiety.

Students, Staff and Parents

As described earlier, the students represent a wide variety of backgrounds. School A has students who live in subsidized housing as well as students living in very large houses. Despite the varied backgrounds, these students appear to get along well and from observations, were very well behaved. The principal reported only two fights in the past year related to race. Results from a past school survey indicated that the students were happy at the school and spend a great deal of time there. In fact, the principal considered one of the school's strengths the students' cooperative behaviour and their ability to work together as a team.

Similarly, the school staff also was considered a strength. These teachers were described as skilled, very motivated, and student centered. Data from a past school survey indicated that 100% of the teachers agreed with the school's leadership, supported the principal, and were happy with their jobs. None of the permanent staff has wanted to transfer out of the school. The principal said there have been some teachers who were exceptions but they were in temporary positions and did not stay at the school. The staff was described as young with many maternity and parental leaves in the past year. It was estimated that a third of the staff lived in the school's community.

The principal has been with the school since it opened. She appeared to be involved with all aspects of the school from talking to parents about organizing a school council to cheering the students at a school assembly to greeting former students visiting the school. Her office is situated behind the reception area at the school entrance and has floor to ceiling glass walls on three sides. From her office you can see the front foyer of the school, the hallway and open lunch room area. She is very visible and accessible to all who enter the school. She considers students her first priority and in the past year went back to teaching so she would not lose sight of the focus of her job.

The parents of the students at school A were described as very involved in their children's education and "pro-education." They appear to have strong opinions and many ideas. For example, the principal noted school survey results from parents were very good but also included literally pages of comments. The school receives many suggestions and a lot of feedback from the parents through visits to the school, letters and replies to the school's newsletter. Although the parents provide many comments, in some ways they are less actively involved with the school. These parents appear to have busy lives so when it comes to things like fundraising or being in an executive role on the school council advisory team, they are not very active. It seems as if parents like the way the school is run, support and encourage their children and the events their children are involved in but prefer to abstain from the political side of the school's organization.

In summary, school A is composed of a very motivated, active staff who encourages students to excel. The school seems to have a strong sense of identity and school spirit is high. Although a wide range of economic backgrounds are represented by the student body, the balance leans toward upper-middle class families. School A does a number of things to facilitate the transition to seventh grade and the students seem to appreciate it. Students sometimes complain about how strict the school is but the educators believe the students understand that the rules reflect concern and caring for the students. Overall, students, teachers and parents appear happy to be involved with this school.

School B

Demographic Information

Like school A, school B is a relatively new school, only four years old the year the subjects started seventh grade. There were 644 students attending this school in grades seven through nine. The staff consists of 30 full-time equivalent positions with about 35 staff members, some part-time and some job sharing. Approximately 35% of the teachers have been with the school for four years and there were five new staff members the year of the study. The principal was assigned to the school before it was completed and has remained there.

Approximately 65% of the students attending school B come from the school's catchment area. The 35% that come from outside the area choose school B for its academic strength and for the school's warm and friendly atmosphere. There were 23 elementary schools that were feeding students to school B with as many as 150 to as few as one student from each school.

The neighbourhood surrounding school B is a fairly varied area with some pockets of prosperity. While some homes were built prior to 1960, the majority were built in the 1970s and 1080s with construction tapering off in the late 1980s. Average family incomes for the neighbourhoods surrounding school B range from the low to mid-$40,000.00 mark (i.e., $40,957.00 to $46,679.00; Statistics Canada, 1991). Because nearly a third of the students attending school B do not live in the area, caution must be exercised when making any conclusions about the socioeconomic backgrounds of the students. In general, however, it would appear that the students attending school B tend to be from working class families. Further, school B is located in a less prosperous looking neighbourhood than school A.

School Organization and Philosophy

School B follows a middle school philosophy and organization. The basis of their philosophy is that the most important interaction in the school is between people, mainly students, teachers and parents. These interactions must support learning and the vehicle used to promote learning is curriculum. The staff tries to focus on the students as junior high students instead of little senior high students. The developmental differences they try to account for include things like short attention spans, the need to talk and to expend energy. The teachers try to work with the students' energy instead of fighting against it.

Another philosophical view they have is that teachers teach students best whom they know best. Toward this end, students are assigned to a core teacher who remains the students' core teacher throughout the three years at the school. No teacher works with more than 80 students. The teachers each are responsible for teaching the core subjects and "complementary" subjects such as French or music are taught by other teachers. Even when students switch classes for these complementaries they move as a group or some switches are built into the classroom so the students do not have to move. Teachers can work together teaching different subjects and many enjoy teaching more than one subject. In fact, teaching one subject has been described as stifling because the teachers cannot integrate the information. By having a core system teachers can examine one topic from different angles (e.g., language arts, social studies, mathematics).

The emphasis at school B is less on covering the curriculum but more on ensuring that students master essential skills. Students must be able to demonstrate what they have learned in a variety of ways not simply writing a test and trying to second guess what the teacher is asking for. Recently the school instituted a requirement that each student must participate in at least one learning demonstration. Students must not only demonstrate what they know but also be able to answer questions by their audience (i.e., teachers) about how they arrived at their conclusions, the process they went through, and what kinds of decisions they made about things. Teachers try to pick topics for these learning demonstrations that integrate a number of learning areas and are not simply related to one subject. For example, one topic asked students to take the role of concerned citizens living in an area where they were bringing in a new hydroelectric dam. The students had to study and evaluate the situation and report on whether they thought the dam was a good idea or not.

Within the classroom, the students are not viewed as sponges waiting to receive information. Teachers are unlikely to be standing up in front of the classroom lecturing, instead teachers are facilitators of learning. Students are expected to be able to work autonomously with the teacher moving around checking on them and redirecting them when necessary.

The resources available at the school are not like many traditional junior high schools. For example, there is no effort to ensure each student has a textbook. The belief is that trying to teach something by assigning a certain number of pages is not teaching. Students are encouraged to seek out the information they need by using the resources available to them, not simply absorb and regurgitate material from a standard textbook. Money is put into library books, CD-ROMs, laser disks and video tapes. The next major resource the principal was trying to get was the Internet. He believed the Internet, as an ever-changing resource, forces you to think whereas a resource that does not change does not make you think; you simple like it or not. The Internet also would be a more up to date resource than most books. For example, students doing a project on Russia could get an English newspaper out of St. Petersburg on the Internet and examine the Russians' view on Bosnia. This information would be more meaningful than any dated information they could read in a book.

Another example of the technical expertise at school B is the use of a computer-based home study program. Students are taught by a classroom teacher via a computer link to the home. This program is best suited to students who learn well with a computer, are away from the school district for long periods of time, or have physical conditions that make school attendance difficult. The students are required to physically attend the school one or two times a month or they can choose to attend as often as two to three times a week. The computer links them to class 24 hours a day and they can talk to teachers and other students via electronic mail. Like the school's philosophy, the computer is not simply used to present information that must be regurgitated on a test. Rather the teachers want the students to use the computers to find databases and correlate and analyze information, to use desktop publishing to produce reports and to use electronic encyclopedias to find information quickly. Despite the technological advances being implemented at school B, the principal emphasized that they were a people school using technology for learning not a technology school.

The Transition to Seventh Grade

Unlike school A, school B does not have an extensive program established to facilitate the transition to seventh grade. The staff at school B do not see much anxiety or fear in the seventh grade students because the core system means there are not many major changes in the school's organization compared to elementary schools. Students in seventh grade spend most of their time with one or two teachers. During the first one to two weeks of school, the students stay with the same teacher and do not have any class changes. After that initial period of time, there is only one class change and the students move as a group. The other complementary subject is built into the classroom. Because the students do not have a timetable where they must change classes and teachers every period, many of the practical concerns seventh grade students have are eliminated.

During the spring, presentations are made to the sixth grade students and teachers are encouraged to do walkovers with their students to tour the school. The staff was considering organizing more activities to facilitate the transition and instituting a buddy system with new students paired with older students. In general, the middle school organization with the core teacher appears to eliminate a great deal of junior high school anxiety that many seventh-grade students experience.

Students, Staff and Parents

The students at school B come from a variety of backgrounds and represent a number of different racial groups. The participants in the study were typical early adolescents: many were well behaved but a few were more vocal, active and needed to express their individuality. The students seemed to like their new school and were often anxious to return to class as soon as possible.

The staff at school B consisted of approximately 35 teachers filling 30 full time positions, and 15 support staff. The principal estimated about a third of the staff turn over each year and that a third of the staff had been at the school since it opened. There were five new teachers the year of the study. The principal felt there was a good mix of veteran and new teachers. With the school's middle school philosophy and organization, teachers need to be flexible and able to work as a team. The teachers who like to open their classroom doors, let the students in and then shut the door do not fit very well with the school's middle school approach to education. Teachers can work together in pairs or groups and are encouraged to do so. Grade level meetings are held so all the seventh-grade teachers know what their colleagues are doing and cooperative efforts may be undertaken.

As part of the school's philosophy, the school follows a site manager approach which states that the people accountable for results also should have the power to make decisions. This gives the teachers more power to deal with the things that happen in their classrooms. For example, a teacher, not the principal, would decide whether a student should be suspended or not. The principal may not be aware of all the details and nuances of what has been happening in the classroom, therefore, the teacher is considered the best person to make the decision.

The principal has been with the school since it opened and in fact, was hired even before the school was built. At the time, there was a message that the board was not happy with the way things were being done at the junior high school level and they wanted change. It was the principal who adopted the middle school approach and with many changes and input from many different people, it has evolved to the present philosophy and organization.

The principal of school B appeared to be very active with the community around the school. He saw the community as another resource for his school and was making business partnerships with different companies. For example, one local store was offering to give the school day-old baked goods and the principal was trying to work out how to get a free breakfast program started for those students who could benefit from such an arrangement. While some of his time is spent outside the school, the principal also is very involved with his students. As an example, he made a wager with the students that he would shave his head if they packed 300 boxes of gifts for children in war torn countries. He lost the bet and had his head shaved in the school's gymnasium in front of the entire school body.

The students at school B tend to come from more working class families than the students at school A. However, both groups of parents were described as placing a high value on education and their children. The philosophy of school B encourages parents to be a part of their children's education. This involvement is made a bit easier when it comes time for the parent-teacher interviews because the parents only have to meet and speak with one teacher who knows their child well, not nine different teachers. Finally, the parents at school B were described as being very involved with the school (e.g., parents contribute heavily to the disciplinary process) and supportive of the middle school approach.

In summary, school B is located in a lower socioeconomic neighbourhood than school A. Both schools are about the same size and the same age but are different in many respects. School B has adopted a middle school philosophy which involves core teachers, and a team approach to teaching. Students who have attended other junior high schools feel more comfortable at school B because one teacher gets to know them well instead of many teachers only being familiar with them. The school has a number of technological resources and the principal has worked hard at developing numerous business and community resources. Few things are done to facilitate the transition to junior high school because the students do not appear to have a great deal of anxiety because of the middle school organization. Overall, the students appear interested in what they are learning and motivated by how they are learning it.

Appendix B

Table 1

ANOVA for Students' Ratings of Parental Social Companionship by Elementary School, First Test Session

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Between Groups	3	14.64	4.88	7.27	0.00
Within Groups	91	61.06	0.67		

Table 2

ANOVA for Students' Ratings of Friends Emotional Support by Elementary School, First Test Session

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Between Groups	3	8.50	2.83	6.16	0.00
Within Groups	88	40.49	0.46		

Table 3

ANOVA for Students' Ratings of Parental Instrumental Support by Elementary School, First Test Session

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Between Groups	3	4.43	1.48	4.12	0.00
Within Groups	90	32.23	0.36		

Table 4

ANOVA for Students' Ratings of Personal Intimacy by Gender, First Test Session

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Between Groups	1	5.16	5.16	12.12	0.00
Within Groups	92	39.21	0.43		

Table 5

ANOVA for Students' Ratings of Friends' Emotional Support by Gender, First Test Session

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Between Groups	1	5.96	5.96	12.46	0.00
Within Groups	90	43.04	0.48		

Table 6

ANOVA for Students' Ratings of Friends' Informational Support by Gender, First Test Session

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Between Groups	1	4.64	4.64	11.60	0.00
Within Groups	92	36.79	0.40		

Table 7

Within Subjects ANOVA for Source of Support by Type of Support (3 X 4), First Test Session

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Source of Support	2	28.12	14.06	60.36	0.00
Source Error	168	39.13	0.23		
Type of Support	3	200.05	66.68	196.54	0.00
Type Error	252	85.50	0.34		
Source by Type	6	95.31	19.89	74.84	0.00
Interaction Error	504	107.00	0.21		

Table 8

ANOVA for Students' Attendance by Elementary School, First Test Session

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Between Groups	3	123.82	41.27	3.11	0.03
Within Groups	90	1193.14	13.26		

Table 9

ANOVA for Students' Writing Scores by Elementary School, First Test Session

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Between Groups	3	1.84	0.61	3.23	0.03
Within Groups	91	17.27	0.49		

Table 10

ANOVA for Students' Ratings of Informational Support from Friends by Gender, Second Test Session

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Between Groups	1	5.41	5.41	11.11	0.001
Within Groups	73	35.55	0.49		

Table 11

ANOVA for Students' Ratings of Personal Intimacy by Gender, Second Test Session

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Between Groups	1	8.78	8.78	15.40	0.00
Within Groups	73	41.59	0.57		

Table 12

ANOVA for Students' Ratings of Total Loneliness by Gender, Second Test Session

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Between Groups	1	5.38	5.38	11.27	0.00
Within Groups	73	34.86	0.48		

Table 13

Within Subjects ANOVA for Source of Support by Type of Support (3 X 4), Second Test Session

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Source of Support	2	290.83	145.41		132.17 0.001
Source Error	144	158.43	1.10		
Type of Support	3	102.08	34.03	79.57	0.00 1
Type Error	216	92.37	0.43		
Source by Type	6	84.27	14.05	59.30	0.001
Interaction Error	432	102.33	0.24		

Table 14

ANOVA for Students' Composite Grade Scores by Junior High School, Third Test Session

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Between Groups	1	4.94	4.94	10.85	0.002
Within Groups	73	33.27	0.46		

Table 15

ANOVA for Students' Ratings of Friendship Intimacy by Gender, Third Test Session

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Between Groups	1	8.71	8.71	16.30	0.00
Within Groups	70	37.42	0.53		

Table 16

Within Subjects ANOVA for Students' Ratings of Teachers' Emotional Support Across the Three Test Sessions

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Between Groups	2	15.65	7.82	21.85	0.001
Within Groups	140	50.13	0.36		

Table 17

Within Subjects ANOVA for Students' Ratings of Teachers' Informational Support Across the Three Test Sessions

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Between Groups	2	14.96	7.48	22.91	0.001
Within Groups	140	45.71	0.33		

Table 18

Within Subjects ANOVA for Students' Composite Ratings of Teachers' Support (Informational, Emotional, Instrumental) Across the Three Test Sessions

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Between Groups	2	12.06	6.03	22.81	0.001
Within Groups	140	37.02	0.26		

Table 19

Within Subjects ANOVA for Students' Ratings of Teachers' Social Companionship Across the Three Test Sessions

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Between Groups	2	56.19	2.79	6.66	0.002
Within Groups	134	5.59	0.42		

Table 20

Within Subjects ANOVA for Source of Support by Type of Support (3 X 4), Third Test Session

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F ratio	Probability
Source of Support	2	355.64	177.82		184.81 0.001
Source Error	132	127.01	0.96		
Type of Support	3	91.18	30.39	63.81	0.001
Type Error	198	94.31	0.48		
Source by Type	6	55.82	9.30	40.60	0.001
Interaction Error	396	90.75	0.23		

Table 21

Forward Stepwise Multiple Regression Predicting Third Test Session Total Loneliness from First Session Support Measures

---

Criteria PIN = 0.05 POUT = 0.10

Variable(s) Entered on Step Number
1.. Informational Support From Friends

Multiple R	.57
R Square	.33
Adjusted R Square	.32
Standard Error	.61

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	12.21	12.21
Residual	68	25.07	0.37

F = 33.11 Significant F = 0.00

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Informational Support from Friends	-0.62	0.11	-0.57	-5.75	0.00
(Constant)	5.15	0.25		21.98	0.00

Variables not in the Equation

Variable	Beta In	Partial	Min Tolerance	T	Sig T
Social Companionship from Friends	.09	.11	.92	.87	.39
Social Companionship from Parents	-.13	-.16	.97	-1.29	.19
Social Companionship from Teachers	-.06	-.07	.92	-.55	.59
Emotional Support from Friends	-.01	-.00	.26	-.04	.97
Instrumental Support from Friends	.19	.20	.76	1.71	.09
Emotional Support					

```
from Parents                -.01     -.02      .84          -.13     .90
Informational Support
from Parents                -.14     -.16      .85          -1.30    .19
Instrumental Support
from Parents                -.11     -.13      .98          -1.07    .29
Emotional Support
from Teachers        -.14      -.15      .79          -1.28    .20
Informational Support
from Teachers        -.12      -.13      .84          -1.10    .27
Instrumental Support
from Teachers        -.02      -.02      .96          -.19     .85

End Block Number 1     PIN = .050 Limits reached.
```

Table 22

Forward Stepwise Multiple Regression Predicting Third Test Session Total Loneliness from First Session Social Companionship Measures

---

Criteria PIN = 0.05 POUT = 0.10

Variable(s) Entered on Step Number
1.. Social Companionship Support from Parents

Multiple R	.24
R Square	.06
Adjusted R Square	.05
Standard Error	.71

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	2.22	2.22
Residual	70	35.69	0.51
F = 4.36		Significant F = 0.04	

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Social Companionship Support from parents	-0.21	0.10	-0.24	-2.09	0.04
(Constant)	4.57	0.22		20.48	0.00

Variables not in the Equation

Variable	Beta In	Partial	Min Tolerance	T	Sig T
Social Companionship from Friends	-.10	-.10	.99	-.82	.41
Social Companionship from Teachers	-.14	-.13	.81	-1.10	.27

End Block Number 1 PIN = .050 Limits reached.

Table 23

Forward Stepwise Multiple Regression Predicting Third Test Session Total Loneliness from Second Session Support Measures

---

Criteria PIN = 0.05 POUT = 0.10

Variable(s) Entered on Step Number
1.. Emotional Support From Friends

Multiple R	.46
R Square	.21
Adjusted R Square	.20
Standard Error	.66

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	8.10	8.10
Residual	69	29.73	0.43
F = 18.79		Significant F = 0.00	

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Emotional Support from Friends	-0.43	0.10	-0.46	-4.34	0.00
(Constant)	5.19	0.26		20.35	0.00

Variables not in the Equation

Variable	Beta In	Partial	Min Tolerance	T	Sig T
Social Companionship from Friends	-.01	-.01	.81	-.61	.95
Social Companionship from Parents	-.09	-.10	.93	-0.79	.43
Social Companionship from Teachers	.09	.10	.97	.85	.40
Informational Support from Friends	-.22	-.13	.28	-1.09	.28
Instrumental Support from Friends	.16	.17	.84	1.39	.17
Emotional Support					

from Parents	-.09	-.09	.88	-.77	.44
Informational Support from Parents	-.21	-.22	.90	-1.88	.07
Instrumental Support from Parents	-.19	-.20	.86	-1.67	.10
Emotional Support from Teachers	.11	.10	.74	.86	.39
Informational Support from Teachers	-.01	-.01	.74	-.08	.94
Instrumental Support from Teachers	.19	.21	.95	1.73	.09

End Block Number 1 PIN = .050 Limits reached.

Table 24

Forward Stepwise Multiple Regression Predicting Third Test Session Personal Intimacy from First Session Support Measures

---

Criteria PIN = 0.05 POUT = 0.10

Variable(s) Entered on Step Number
1.. Informational Support From Friends

Multiple R	.62
R Square	.39
Adjusted R Square	.38
Standard Error	.64

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	17.64	17.64
Residual	68	28.11	0.41
F = 42.67		Significant F = 0.00	

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Informational Support from Friends	-0.75	0.11	-0.62	-6.53	0.00
(Constant)	5.90	0.27		22.20	0.00

Variables not in the Equation

Variable	Beta In	Partial	Min Tolerance	T	Sig T
Social Companionship from Friends	.09	.11	.92	.91	.37
Social Companionship from Parents	-.11	-.14	.97	-1.13	.26
Social Companionship from Teachers	-.12	-.14	.92	-1.19	.24
Emotional Support from Friends	-.06	-.04	.26	-.34	.74
Instrumental Support from Friends	.19	.21	.76	1.78	.089

Emotional Support from Parents	.01	.02	.84	.14	.89
Informational Support from Parents	-.12	-.14	.85	-1.15	.26
Instrumental Support from Parents	-.06	-.07	.98	-.58	.56
Emotional Support from Teachers	-.15	-.18	.79	-1.46	.15
Informational Support from Teachers	-.16	-.19	.84	-1.59	.12
Instrumental Support from Teachers	-.02	-.03	.96	-.24	.81

End Block Number 1 PIN = .050 Limits reached.

Table 25

Forward Stepwise Multiple Regression Predicting Third Test Session Personal Intimacy from First Session Social Companionship Support Measures

Criteria PIN = 0.05 POUT = 0.10

Variable(s) Entered on Step Number
1.. Social Companionship Support From Teachers

Multiple R	.29
R Square	.08
Adjusted R Square	.07
Standard Error	.78

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	3.83	3.83
Residual	70	42.30	0.60
F = 6.34		Significant F = 0.01	

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Social Companionship Support from Teachers	-0.31	0.12	-0.29	-2.52	0.01
(Constant)	5.47	0.50		11.04	0.00

Variables not in the Equation

Variable	Beta In	Partial	Min Tolerance	T	Sig T
Social Companionship from Friends	-.09	-.09	.99	-.79	.43
Social Companionship from Parents	-.12	-.11	.81	-0.96	.34

End Block Number 1 PIN = .050 Limits reached.

Table 26

Forward Stepwise Multiple Regression Predicting Third Test Session Personal Intimacy from Second Session Support Measures

---

Criteria PIN = 0.05 POUT = 0.10

Variable(s) Entered on Step Number
1.. Informational Support From Friends

Multiple R	.43
R Square	.19
Adjusted R Square	.18
Standard Error	.74

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	8.69	8.69
Residual	69	37.33	0.54
F = 16.07		Significant F = 0.00	

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Informational Support from Friends	-0.47	0.12	-0.43	-4.01	0.00
(Constant)	5.36	0.29		18.34	0.00

Variables not in the Equation

Variable	Beta In	Partial	Min Tolerance	T	Sig T
Social Companionship from Friends	-.05	-.05	.88	-.41	.68
Social Companionship from Parents	-.12	-.13	.96	-1.04	.30
Social Companionship from Teachers	.02	.02	.99	.18	.85
Emotional Support from Friends	-.15	-.09	.28	-.72	.47
Instrumental Support from Friends	.20	.20	.82	1.72	.09
Emotional Support					

from Parents	-.08	-.08	.81	-.63	.53
Informational Support from Parents	-.21	-.22	.85	-1.83	.07
Instrumental Support from Parents	-.14	-.14	.85	-1.16	.25
Emotional Support from Teachers	.10	.10	.80	.83	.41
Informational Support from Teachers	-.00	-.00	.79	-.01	.99
Instrumental Support from Teachers	.23	.25	.98	2.17	.04

Variable(s) Entered on Step Number

2.. Instrumental Support from Teachers

Multiple R	.49
R Square	.24
Adjusted R Square	.22
Standard Error	.72

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	2	11.10	5.55
Residual	68	34.92	0.51
F = 10.81		Significant F = 0.00	

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Informational Support from Friends	-0.50	0.12	-0.47	-4.37	0.00
Instrumental Support from Teachers	.23	0.11	0.23	2.17	0.03
(Constant)	4.49	0.49		9.11	0.00

Variables not in the Equation

Variable	Beta In	Partial	Min Tolerance	T	Sig T
Social Companionship					

from Friends	-.05	-.06	.87	-.47	.64
Social Companionship from Parents	-.13	-.15	.95	-1.23	.22
Social Companionship from Teachers	-.06	-.06	.89	-.51	.61
Emotional Support from Friends	-.24	-.14	.27	-1.19	.24
Instrumental Support from Friends	.10	.09	.63	.78	.44
Emotional Support from Parents	-.08	-.08	.79	-.69	.49
Informational Support from Parents	-.21	-.22	.83	-1.84	.07
Instrumental Support from Parents	-.20	-.20	.81	-1.71	.09
Emotional Support from Teachers	-.04	-.04	.60	-.29	.77
Informational Support from Teachers	-.13	-.12	.66	-.99	.32

End Block Number 1 PIN = .050 Limits reached.

Table 27

Forward Stepwise Multiple Regression Predicting Third Test Session Group Integration from First Session Support Measures

---

Criteria PIN = 0.05 POUT = 0.10

Variable(s) Entered on Step Number
1.. Informational Support From Friends

Multiple R	.44
R Square	.19
Adjusted R Square	.18
Standard Error	.69

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	7.78	7.78
Residual	68	32.22	0.47
F = 16.42		Significant F = 0.00	

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Informational Support from Friends	-0.50	0.12	-0.44	-4.05	0.00
(Constant)	5.13	0.28		18.03	0.00

Variables not in the Equation

Variable	Beta In	Partial	Min Tolerance	T	Sig T
Social Companionship from Friends	.08	.08	.92	.69	.49
Social Companionship from Parents	-.13	-.15	.97	-1.23	.23
Social Companionship from Teachers	.02	.02	.92	.14	.89
Emotional Support from Friends	.05	.03	.26	0.25	.81
Instrumental Support from Friends	.17	.16	.76	1.35	.18
Emotional Support					

```
from Parents               -.04      -.04       .84          -.35     .73
Informational Support
from Parents               -.14      -.15       .85          -1.22    .23
Instrumental Support
from Parents               -.15       -.16      .98           -1.34   .19
Emotional Support
from Teachers       -.11       -.11       .79          - .91     .37
Informational Support
from Teachers       -.06       -.06       .84          -.47      .64
Instrumental Support
from Teachers       -.01        -.01       .96          -.12     .91

End Block Number 1    PIN = .050 Limits reached.
```

Table 28

Forward Stepwise Multiple Regression Predicting Third Test Session Group Integration from Second Session Support Measures

---

Criteria PIN = 0.05 POUT = 0.10

Variable(s) Entered on Step Number
1.. Emotional Support From Friends

Multiple R	.45
R Square	.21
Adjusted R Square	.19
Standard Error	.69

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	8.42	8.42
Residual	69	32.47	0.47
F = 17.89		Significant F = 0.00	

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Emotional Support from Friends	-0.44	0.10	-0.45	-4.23	0.00
(Constant)	5.11	0.27		19.16	0.00

Variables not in the Equation

Variable	Beta In	Partial	Min Tolerance	T	Sig T
Social Companionship from Friends	.00	.00	.81	.03	.98
Social Companionship from Parents	-.06	-.07	.93	-0.56	.58
Social Companionship from Teachers	.11	.13	.97	1.05	.30
Informational Support from Friends	-.10	-.06	.28	-.48	.63
Instrumental Support from Friends	.12	.12	.84	1.04	.30
Emotional Support					

from Parents	-.03	-.04	.88	-.30	.76
Informational Support from Parents	-.14	-.15	.90	-1.25	.22
Instrumental Support from Parents	-.20	-.21	.86	-1.76	.08
Emotional Support from Teachers	.06	.06	.74	.51	.61
Informational Support from Teachers	-.03	-.03	.74	-.26	.80
Instrumental Support from Teachers	.07	.08	.95	.66	.51

End Block Number 1 PIN = .050 Limits reached.

Table 29

Forward Stepwise Multiple Regression Predicting Third Test Session Self Worth from First Session Support Measures

---

Criteria PIN = 0.05 POUT = 0.10

Variable(s) Entered on Step Number
1.. Informational Support From Parents

Multiple R	.33
R Square	.11
Adjusted R Square	.09
Standard Error	.52

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	2.07	2.07
Residual	64	16.99	0.27
F = 7.79		Significant F = 0.00	

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Informational Support from Parents	-0.26	0.09	-0.33	-2.79	0.00
(Constant)	3.61	0.19		18.67	0.00

Variables not in the Equation

Variable	Beta In	Partial	Min Tolerance	T	Sig T
Social Companionship from Friends	.03	.03	.99	.22	.83
Social Companionship from Parents	-.18	-.17	.74	-1.35	.18
Social Companionship from Teachers	.02	.02	.93	.17	.87
Emotional Support from Friends	-.16	-.16	.88	-1.31	.19
Informational Support from Friends	-.10	-.09	.84	-.75	.46
Instrumental Support					

from Friends	-.01	-.01	.96	-.11	.92
Emotional Support from Parents	.14	.08	.32	.65	.52
Instrumental Support from Parents	-.15	-.14	.73	-1.09	.28
Emotional Support from Teachers	-.13	-.13	.80	-1.02	.31
Informational Support from Teachers	-.14	-.13	.74	-1.01	.32
Instrumental Support from Teachers	-.16	-.17	.98	-1.34	.18

End Block Number 1 PIN = .050 Limits reached.

Table 30

Forward Stepwise Multiple Regression Predicting Third Test Session Self Worth from First Session Emotional Support Measures

---

Criteria PIN = 0.05 POUT = 0.10

Variable(s) Entered on Step Number
1.. Emotional Support From Friends

Multiple R	.34
R Square	.12
Adjusted R Square	.10
Standard Error	.57

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	2.87	2.87
Residual	66	21.39	0.32
F = 8.85		Significant F = 0.00	

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Emotional Support from Friends	-0.27	0.09	-0.34	-2.98	0.00
(Constant)	3.67	0.21		17.60	0.00

Variables not in the Equation

Variable	Beta In	Partial	Min Tolerance	T	Sig T
Emotional Support from Parents	-.17	-.16	.79	-1.35	.18
Emotional Support from Teachers	-.10	-.10	.84	-.82	.42

End Block Number 1 PIN = .050 Limits reached.

Table 31

Forward Stepwise Multiple Regression Predicting Third Test Session Self Worth from Second Session Support Measures

---

Criteria PIN = 0.05 POUT = 0.10

Variable(s) Entered on Step Number
1.. Informational Support From Friends

Multiple R	.31
R Square	.10
Adjusted R Square	.08
Standard Error	.58

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	2.34	2.34
Residual	65	21.68	0.33
F = 7.01		Significant F = 0.01	

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Informational Support from Friends	-0.25	0.10	-0.31	-2.65	0.01
(Constant)	3.67	0.24		15.56	0.00

Variables not in the Equation

Variable	Beta In	Partial	Min Tolerance	T	Sig T
Social Companionship from Friends	.06	.06	.87	.49	.62
Social Companionship from Parents	-.05	-.05	.97	-.44	.66
Social Companionship from Teachers	.08	.09	.99	.69	.50
Emotional Support from Friends	.40	.23	.29	1.86	.07
Instrumental Support from Friends	.14	.13	.82	1.07	.29
Emotional Support					

```
from Parents                .07       .07        .83          .53     .60
Informational Support
from Parents                -.00      -.00       .87          -.02    .99
Instrumental Support
from Parents                -.07      -.07       .87          -.55    .58
Emotional Support
from Teachers         .05        .05        .84         .41      .68
Informational Support
from Teachers         .05        .05        .82         .38      .70
Instrumental Support
from Teachers         .13        .14              .99         1.10    .28

End Block Number 1    PIN = .050 Limits reached.
```

Table 32

Forward Stepwise Multiple Regression Predicting Third Test Session State Anxiety from First Session Support Measures

---

Criteria PIN = 0.05 POUT = 0.10

Variable(s) Entered on Step Number
1.. Informational Support From Teachers

Multiple R	.31
R Square	.10
Adjusted R Square	.08
Standard Error	.26

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	0.49	0.49
Residual	68	4.49	0.07
F = 7.38		Significant F = 0.01	

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Informational Support from Teachers	0.11	0.04	0.31	2.72	0.01
(Constant)	1.17	0.10		11.82	0.00

Variables not in the Equation

Variable	Beta In	Partial	Min Tolerance	T	Sig T
Social Companionship from Friends	.18	.19	.99	1.57	.12
Social Companionship from Parents	.07	.06	.89	.53	.60
Social Companionship from Teachers	-.06	-.06	.85	-.51	.61
Emotional Support from Friends	-.02	-.02	.86	-.19	.85
Informational Support from Friends	.01	.01	.84	.10	.92
Instrumental Support					

from Friends	-.20	-.21	.99	-1.74	.09
Emotional Support from Parents	-.03	-.03	.80	-.25	.80
Informational Support from Parents	.11	.10	.77	.86	.39
Instrumental Support from Parents	.05	.05	.97	.43	.67
Emotional Support from Teachers	-.09	-.05	.25	-.41	.68
Instrumental Support from Teachers	-.20	-.19	.84	-1.60	.12

End Block Number 1 PIN = .050 Limits reached.

Table 33

Forward Stepwise Multiple Regression Predicting Third Test Session State Anxiety from Second Session Support Measures

---

Criteria PIN = 0.05 POUT = 0.10

Variable(s) Entered on Step Number
1.. Informational Support From Friends

Multiple R	.30
R Square	.09
Adjusted R Square	.07
Standard Error	.26

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	0.46	0.46
Residual	69	4.77	0.07
F = 6.59		Significant F = 0.01	

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Informational Support from Friends	0.11	0.04	0.30	2.57	0.01
(Constant)	1.18	0.10		11.27	0.00

Variables not in the Equation

Variable	Beta In	Partial	Min Tolerance	T	Sig T
Social Companionship from Friends	.06	.06	.88	.52	.60
Social Companionship from Parents	.13	.13	.96	1.08	.28
Social Companionship from Teachers	-.01	-.01	.99	-.09	.93
Emotional Support from Friends	.02	.01	.28	.11	.91
Instrumental Support from Friends	-.41	-.39	.82	-3.48	.00
Emotional Support					

from Parents	.13	.12	.81	1.01	.32
Informational Support from Parents	.14	.14	.85	1.16	.25
Instrumental Support from Parents	.04	.04	.85	.34	.74
Emotional Support from Teachers	-.11	-.10	.80	-.87	.39
Informational Support from Teachers	-.15	-.14	.79	-1.14	.26
Instrumental Support from Teachers	-.14	-.14	.98	-1.17	.25

Variable(s) Entered on Step Number
2.. Instrumental Support From Friends

Multiple R	.47
R Square	.22
Adjusted R Square	.20
Standard Error	.24

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	2	1.18	0.59
Residual	68	4.05	0.06
F = 9.87		Significant F = 0.00	

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Informational Support from Friends	0.17	0.04	0.47	3.97	0.00
Instrumental Support from Friends	-.14	0.04	-.41	-3.48	0.00
(Constant)	1.45	0.13		11.69	0.00

Variables not in the Equation

Variable	Beta In	Partial	Min Tolerance	T	Sig T
Social Companionship from Friends	.20	.20	.75	1.68	.10

Social Companionship from Parents		.11		.12		.79		0.97	.34	
Social Companionship from Teachers	.04		.05		.81		.39	.70		
Emotional Support from Friends		.09		.05			.27		.45	.66
Emotional Support from Parents		.13		.13		.69		1.08	.28	
Informational Support from Parents		.13		.13		.71		1.08	.28	
Instrumental Support from Parents		.14		.14		.76		1.17	.25	
Emotional Support from Teachers	-.06		-.06		.71		-.47	.64		
Informational Support from Teachers	-.12		-.12		.69		-1.00	.32		
Instrumental Support from Teachers	.06		.06			.63		.49	.62	

End Block Number 1 PIN = .050 Limits reached.

Table 34

Forward Stepwise Multiple Regression Predicting Third Test Session State Anxiety from First Session Emotional Support Measures

---

Criteria PIN = 0.05 POUT = 0.10

Variable(s) Entered on Step Number
1.. Emotional Support From Teachers

Multiple R	.24
R Square	.06
Adjusted R Square	.04
Standard Error	.27

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	0.31	0.31
Residual	70	4.95	0.07
F = 4.32		Significant F = 0.04	

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Emotional Support from Teachers	0.09	0.04	0.24	2.08	0.04
(Constant)	1.20	0.12		10.21	0.00

Variables not in the Equation

Variable	Beta In	Partial	Min Tolerance	T	Sig T
Emotional Support from Parents	.07	.07	.84	.57	.57
Emotional Support from Friends	.06	.06	.86	.51	.61

End Block Number 1 PIN = .050 Limits reached.

Table 35

Forward Stepwise Multiple Regression Predicting Seventh Grade Composite Achievement Grades from First Session Support Measures

---

Criteria PIN = 0.05 POUT = 0.10

Variable(s) Entered on Step Number
1.. Instrumental Support From Teachers

Multiple R	.31
R Square	.10
Adjusted R Square	.08
Standard Error	.69

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	3.58	3.58
Residual	71	33.48	0.47

F = 7.59 Significant F = 0.01

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Instrumental Support from Teachers	-0.40	0.15	-0.31	-2.76	0.01
(Constant)	28.67	0.59		48.63	0.00

Variables not in the Equation

Variable	Beta In	Partial	Min Tolerance	T	Sig T
Social Companionship from Friends	-.02	-.02	.99	-.19	.85
Social Companionship from Parents	.04	.04	.99	.37	.71
Social Companionship from Teachers	-.06	-.06	.89	-.54	.59
Emotional Support from Friends	-.03	-.03	.98	-.27	.79
Informational Support from Friends	.00	.00	.97	.03	.98
Instrumental Support					

from Friends	.16	.16	.99	1.39	.17
Emotional Support from Parents	-.08	-.09	.99	-.72	.47
Informational Support from Parents	-.04	-.04	.99	- .32	.75
Instrumental Support from Parents	.03	.04	.99	.30	.77
Emotional Support from Teachers	-.05	-.05	.78	- .41	.69
Informational Support from Teachers	.08	.08	.88	.67	.51

End Block Number 1 PIN = .050 Limits reached.